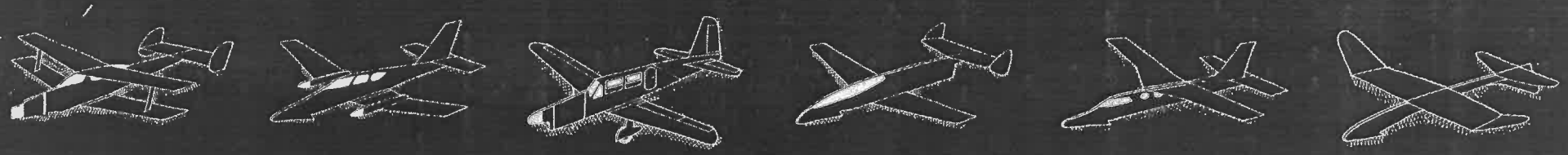
Eddie Bauer®

Whitewings®

Paper Airplanes ■ Avions en papier



Sport Plane Series

flying fun for everyone

includes: ■ 15 paper models

■ instruction booklet ■ rubber band catapult

Made in Japan, assembled in USA for Eddie Bauer Inc. 15010 N.E. 36th St., Redmond, WA 98052 USA Design patent pending.

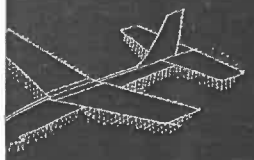
Contents:

- 15 paper airplanes
- 64 page assembly, flight, and design directions
- High-performance rubber band catapult

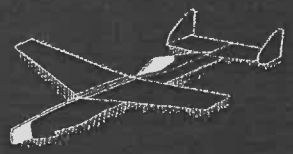
For 10 years and up

Glue not included: We recommend Dupont's "Seal-All", Bond Corporation "527" cements, or "Pritt" clear adhesive for younger children

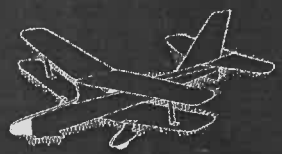
Caution: Launch your plane in a large area away from people who might get hit. Do not fly your plane where vehicles will be passing by.



Canary

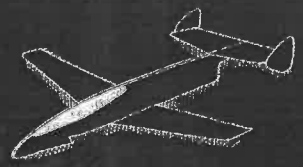


314 Speed-Racer-Shape

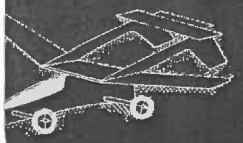


319 Open Cockpit Bi-Plane

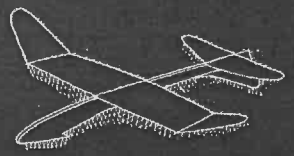
547 Skylark



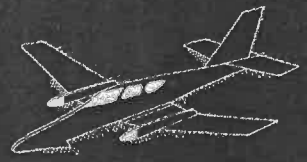
315 Little Bonito



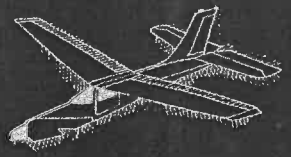
Sky Car



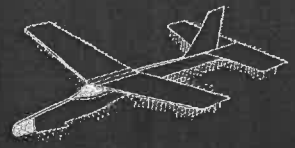
548 Sunbird



316 Twin-Engine



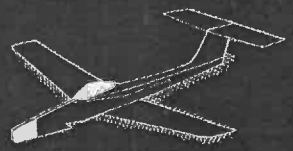
210 "CENTURION"



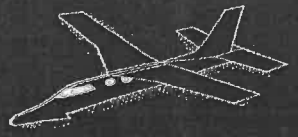
312 Cessna Type

Negative Stagger one

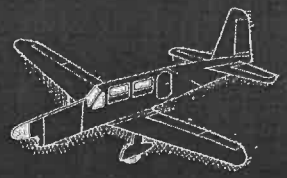
V35 "BONANZA"



313 T-Tail



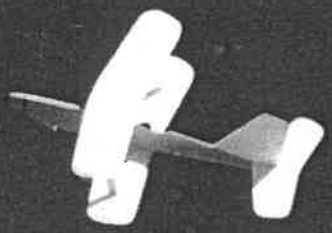
318 Business Jet



C630 "SIMOUN"

Our Creed
To give you such outstanding quality, value, service and guarantee that we may be worthy of your high esteem.

Our Guarantee
Every item we sell will give you complete satisfaction or you may return it for a full refund.



Whitewings®

ASSEMBLY INSTRUCTIONS
FLIGHT INSTRUCTIONS
GUIDELINE FOR WHITEWINGS COMPETITION
INTRODUCTION TO PAPER PLANE DESIGN
HOW TO BUILD "WHITEWINGS"

LIGHT PLANE SERIES

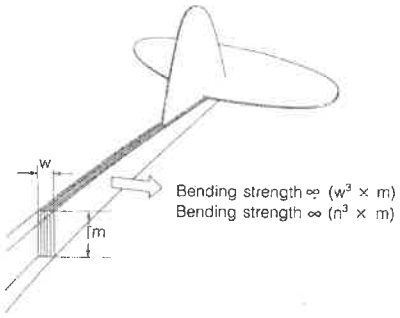


Fig.25 Dimensions of the fuselage and bending strength

If we compare the use of six layers of paper with five layers of paper, we find that six layers of paper leads to about 1.73 times the strength.

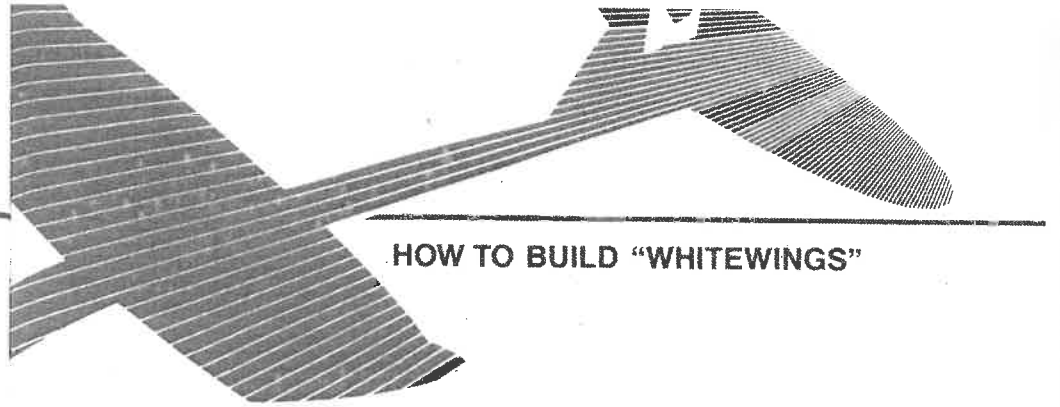
$$\frac{6 \text{ layers}}{5 \text{ layers}} = \frac{6^3 \times m}{5^3 \times m} = \frac{216}{125} \fallingdotseq 1.73$$

One other thing that becomes clear is that it is much more effective to increase the number of layers of paper than it is to increase the height of the body in order to increase strength and reduce bending. If too many layers of paper are used, however, the plane becomes too heavy.
At the same time, it is important to make sure that the several layers of paper are glued together securely. If the gluing is incomplete, then the bending strength is $n \times m$ rather than $n^3 \times m$, leading to a much reduced strength.

The racer type planes included in this Whitewings kit consist of both 5 to 7 layer designs. When you fly them you will feel a slight difference between the two. While you'll need to be much more careful about how you fly the five layer ones, you'll see that they have a lighter and spirited feeling to their flight. I hope that you'll try constructing, flying, and comparing the performance of both types to see for yourself how different they are.

This concludes my explanation of simple design methods. You can now use this knowledge to help you design your own gliders.

Good Luck and Good Flying!



HOW TO BUILD "WHITEWINGS"

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P 45

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P 47

P 48

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P 57

P 52

P 54

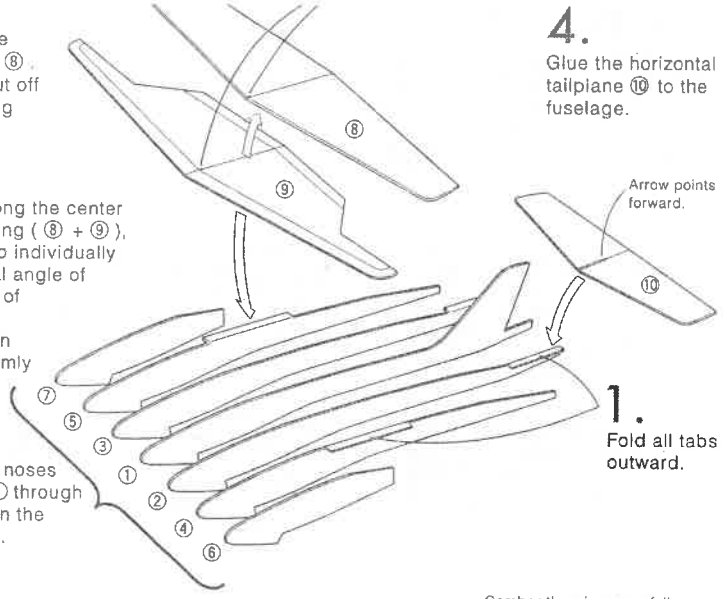
3.
Glue ⑨ to the underside of ⑧. When dry, cut off the protruding portions.

4.
Glue the horizontal tailplane ⑩ to the fuselage.

5.
Placing a ruler along the center line of the main wing (⑧ + ⑨), bend each side up individually to make a dihedral angle of 15° for both sides of the main wing. Then,glue the main wing (⑧ + ⑨) firmly to the fuselage.

2.
Aligning the noses flush, glue ① through ⑦ together in the order shown.

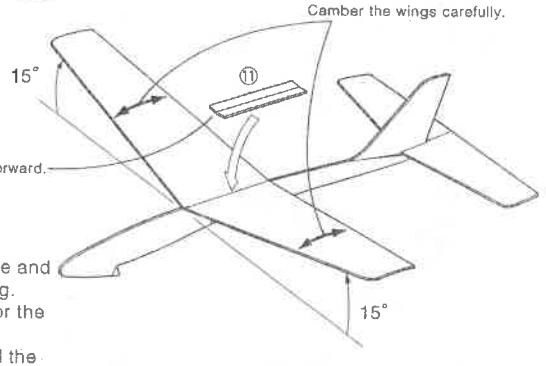
1.
Fold all tabs outward.



FINISHING TOUCHES

● Give the finishing touches to the plane after it dries thoroughly.

6. Camber the main wing slightly with your fingers.
7. Using the dihedral angle gauge, make sure the dihedral angle for the main wing is 15°.
8. Fold ⑪ up slightly along the center line and glue it onto the center of the main wing. Check again that the dihedral angle for the main wing is 15°.
9. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.



TEST FLIGHT

●Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.

3.
Glue ⑩ to the underside of ⑨. When dry, cut off the protruding portions.

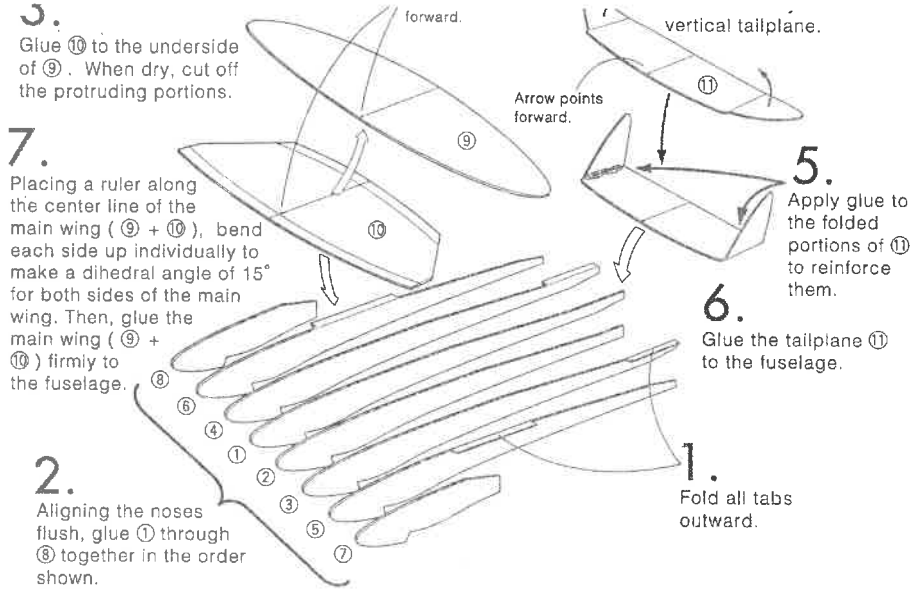
7.
Placing a ruler along the center line of the main wing (⑨ + ⑩), bend each side up individually to make a dihedral angle of 15° for both sides of the main wing. Then, glue the main wing (⑨ + ⑩) firmly to the fuselage.

2.
Aligning the noses flush, glue ① through ⑧ together in the order shown.

1.
Fold all tabs outward.

5.
Apply glue to the folded portions of ⑪ to reinforce them.

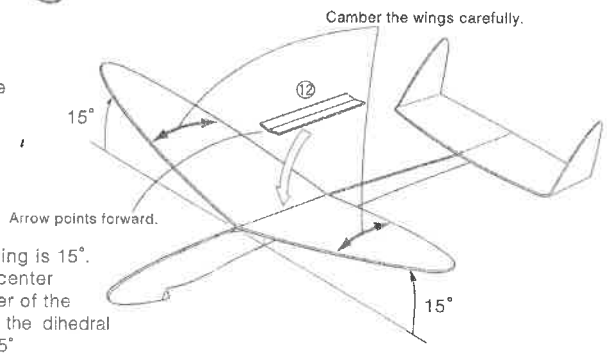
6.
Glue the tailplane ⑪ to the fuselage.



FINISHING TOUCHES

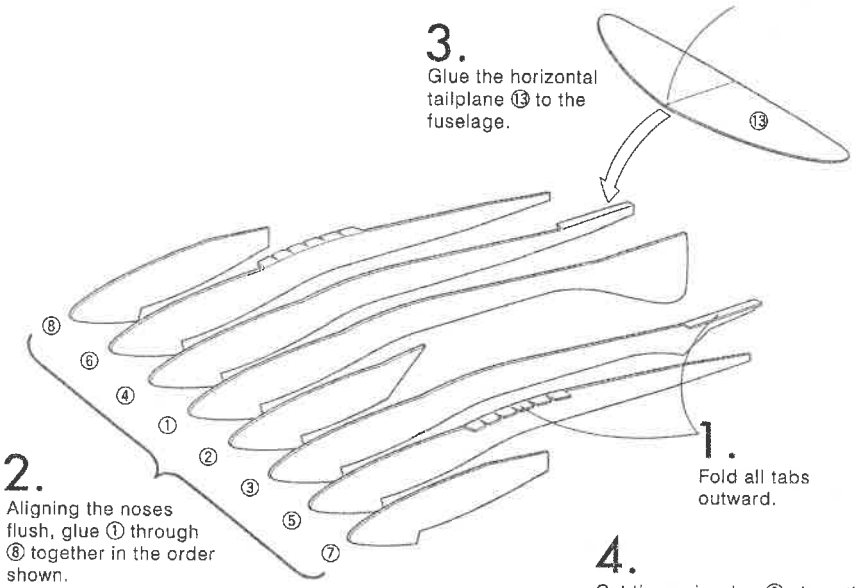
● Give the finishing touches to the plane after it dries thoroughly.

8. Camber the main wing slightly with your fingers.
9. Using the dihedral angle gauge, make sure the dihedral angle for the main wing is 15°.
10. Fold ⑫ up slightly along the center line and glue it onto the center of the main wing. Check again that the dihedral angle for the main wing is 15°
11. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.



TEST FLIGHT

●Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.

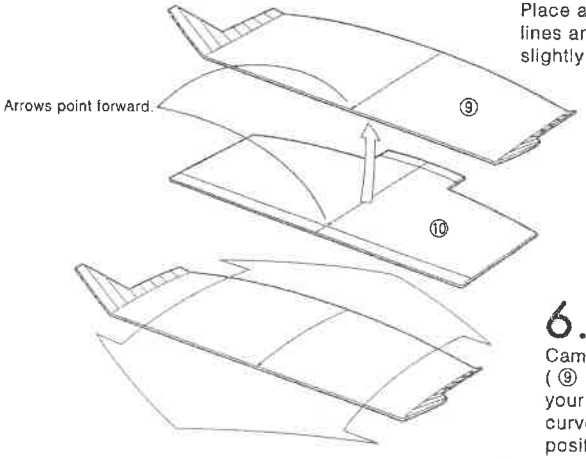


3. Glue the horizontal tailplane ⑬ to the fuselage.

2. Aligning the noses flush, glue ① through ⑧ together in the order shown.

1. Fold all tabs outward.

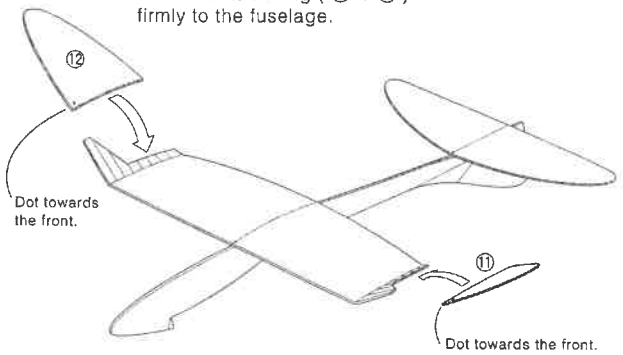
4. Cut the main wing ⑨ along the solid lines up to the dashed lines. Place a ruler along the dashed lines and bend the resulting strips slightly upward.



5. Glue ⑩ to the underside of ⑨. When dry, cut off the protruding portions.

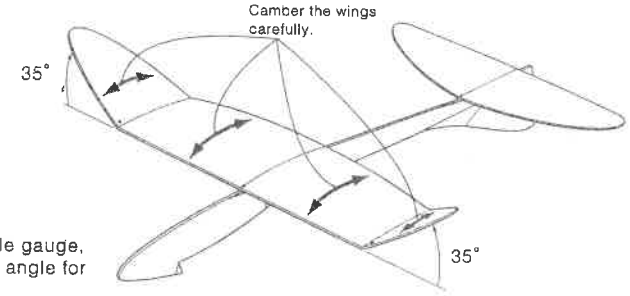
6. Camber the main wing (⑨ + ⑩) carefully with your fingers after the curve of its gluing position on the fuselage.

7. Glue the main wing (⑨ + ⑩) firmly to the fuselage.



8. Make sure the camber of the main wing (⑨ + ⑩) extends to the wing ends following the curve of the gluing position on the fuselage. Then, fold tabs on both ends of the main wing to form a 35° using the dihedral angle gauge.

9. Camber both wing tips ⑪ and ⑫. Apply glue to the top surface of the folded tabs of the main wing. Attach wing tips ⑪ and ⑫ respectively. Once again, check that the dihedral angle at the tips of wing is 35° using the gauge.



FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.

10. Camber the main wing carefully with your fingers.

11. Using the dihedral angle gauge, make sure the dihedral angle for the wing tips are 35°.

12. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.

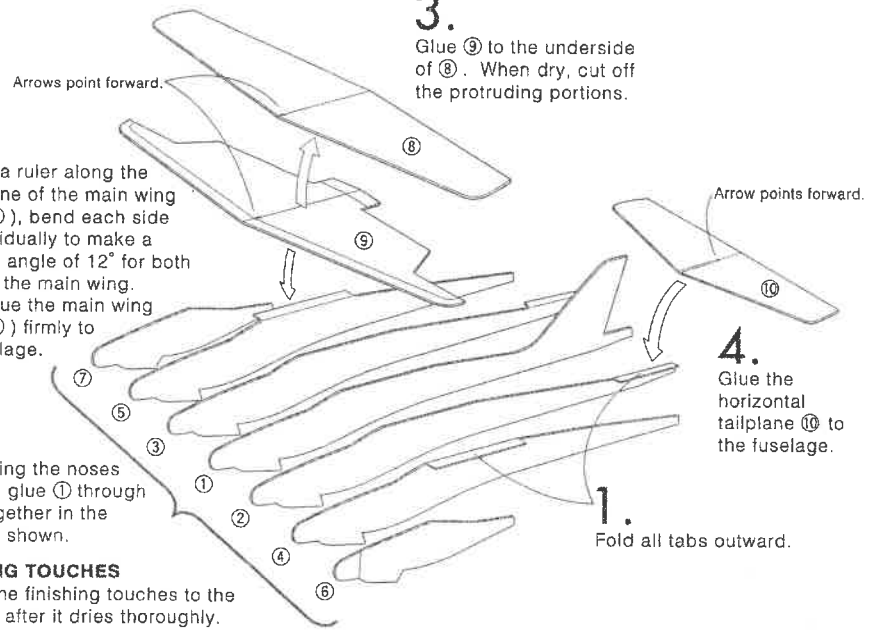
TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.

type flight planes continue to best sellers and became the company's trademark. Flight Plane 312 designed with most of the characteristics of the above-mentioned planes is a basic and easy paper plane to fly.

GLUING INSTRUCTIONS

Glue the parts together in the order indicated.



3. Glue ⑨ to the underside of ⑧. When dry, cut off the protruding portions.

5. Placing a ruler along the center line of the main wing (⑧ + ⑨), bend each side up individually to make a dihedral angle of 12° for both sides of the main wing. Then, glue the main wing (⑧ + ⑨) firmly to the fuselage.

4. Glue the horizontal tailplane ⑩ to the fuselage.

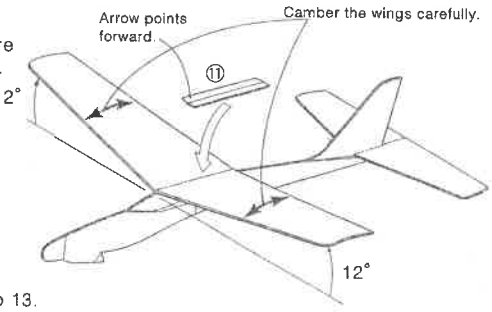
2. Aligning the noses flush, glue ① through ⑦ together in the order shown.

1. Fold all tabs outward.

FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.

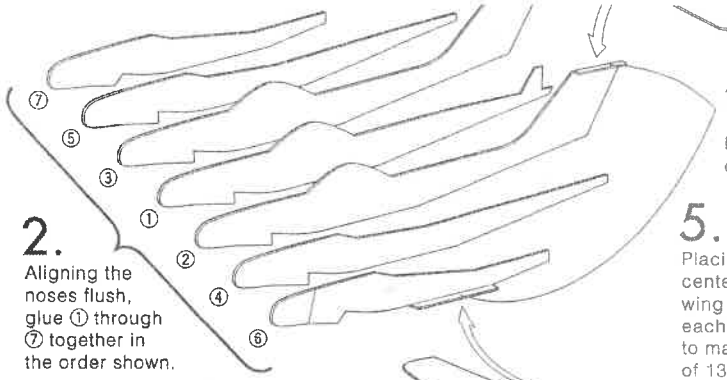
6. Camber the main wing slightly with your fingers.
7. Using the dihedral angle gauge, make sure the dihedral angle for the main wing is 12°.
8. Fold ⑪ up slightly along the center line and glue it onto the center of the main wing. Check again that the dihedral angle for the main wing is 12°.
9. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.



TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.

horizontal tailplane ⑩ onto the tab of the vertical tailplane.

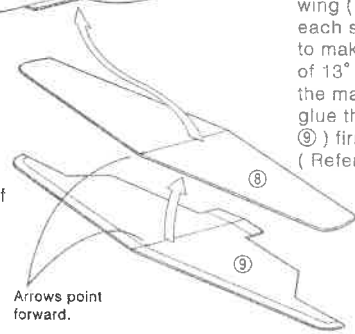


1. Fold all tabs outward.

2. Aligning the noses flush, glue ① through ⑦ together in the order shown.

5. Placing a ruler along the center line of the main wing (⑧ + ⑨), bend each side up individually to make a dihedral angle of 13° for both sides of the main wing. Then, glue the main wing (⑧ + ⑨) firmly to the fuselage (Refer to 〔NOTE〕).

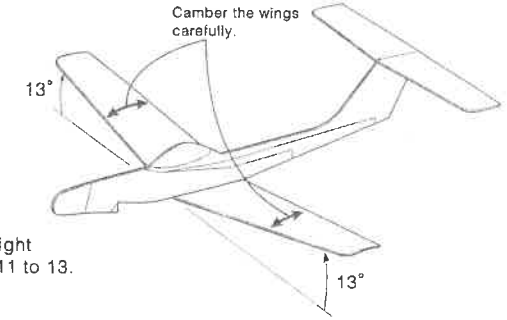
3. Glue ⑨ to the underside of ⑧. When dry, cut off the protruding portions.



FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.

6. Camber the main wing slightly with your fingers.
7. Place the dihedral angle gauge at the underside of the main wing and make sure the dihedral angle for the main wing is 13°.
8. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.



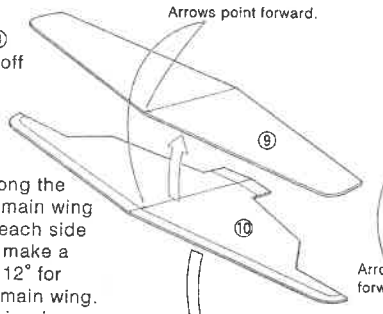
TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.

〔NOTE〕

When gluing the main wing to the fuselage bottom, the folded line on the under side of the main wing for the dihedral angle can be used as the standard for the center line of the main wing. In order to be more accurate, make pinholes at both ends of the center line on the printed side of the main wing. Turn the main wing over and link the pinholes together with a ruler and then draw a center line on the under side of the main wing. Glue the main wing to the fuselage bottom aligning that center line of the main wing with the center of the fuselage bottom.

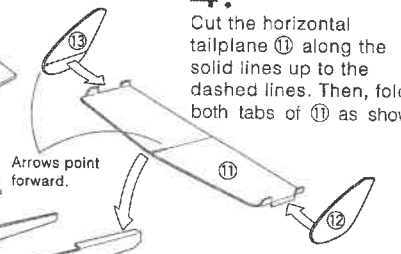
3.
Glue ⑩ to the underside of ⑨. When dry, cut off the protruding portions.



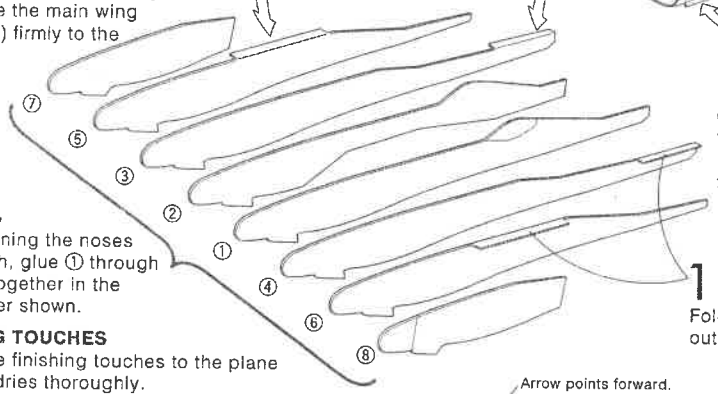
7.
Placing a ruler along the center line of the main wing (⑨ + ⑩), bend each side up individually to make a dihedral angle of 12° for both sides of the main wing. Then, glue the main wing (⑨ + ⑩) firmly to the fuselage.

Glue the vertical tailplane ⑫ and ⑬ to the tabs of the horizontal tailplane ⑪ aligning the arrows on ⑫ and ⑬ with the folded tab lines of ⑪.

4.
Cut the horizontal tailplane ⑪ along the solid lines up to the dashed lines. Then, fold both tabs of ⑪ as shown.



6.
Glue the tailplane ⑪ + ⑫ + ⑬ to the fuselage.



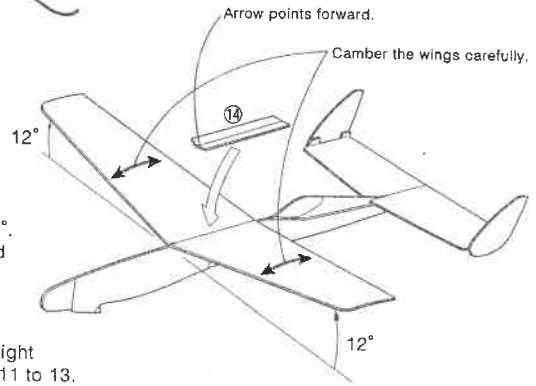
2.
Aligning the noses flush, glue ① through ⑧ together in the order shown.

1.
Fold all tabs outward.

FINISHING TOUCHES

● Give the finishing touches to the plane after it dries thoroughly.

8. Camber the main wing slightly with your fingers.
9. Using the dihedral angle gauge, make sure the dihedral angle for the main wing is 12°.
10. Fold ⑭ up slightly along the center line and glue it onto the center of the main wing. Check again that the dihedral angle for the main wing is 12°.
11. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.



TEST FLIGHT

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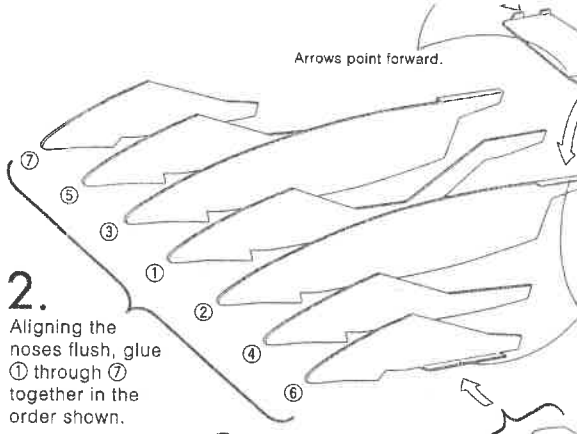


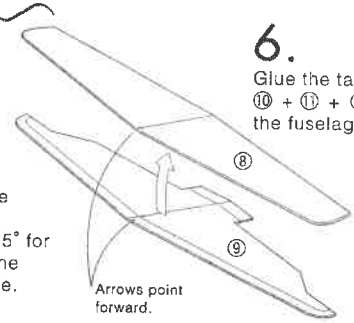
2.
Aligning the noses flush, glue ① through ⑦ together in the order shown.

1.
Fold all tabs outward.

the solid lines up to the dashed lines. Then, fold botn tabs of ⑩ as shown.

5.
Glue the vertical tailplane ⑪ and ⑫ to the tabs of the horizontal tailplane ⑩ aligning the arrows on ⑪ and ⑫ with the folded tab lines of ⑩.

6.
Glue the tailplane ⑩ + ⑪ + ⑫ to the fuselage.



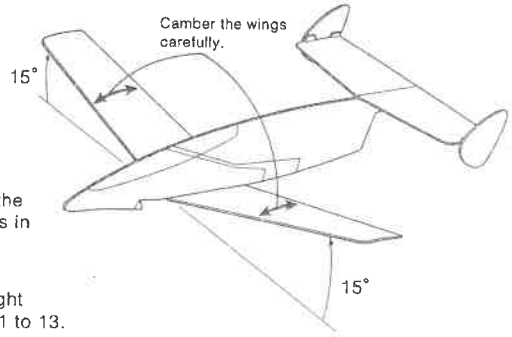
3.
Glue ⑨ to the underside of ⑧. When dry, cut off the protruding portions.

7.
Placing a ruler along the center line of the main wing (⑧ + ⑨), bend each side up individually to make a dihedral angle of 15° for both sides of the main wing. Then, glue the main wing (⑧ + ⑨) firmly to the fuselage.
(Refer to [**NOTE**] on page 45.)

FINISHING TOUCHES

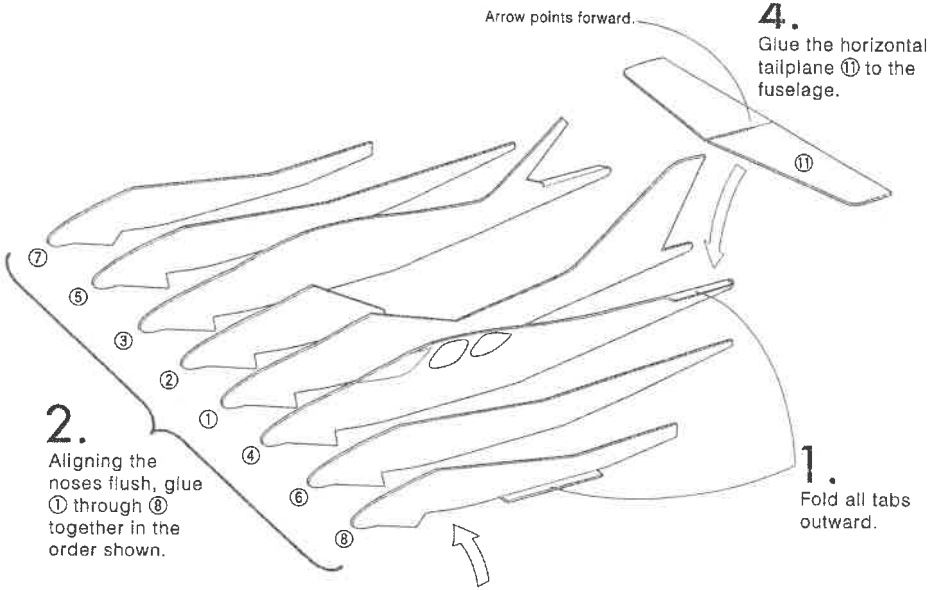
● Give the finishing touches to the plane after it dries thoroughly.

8. Camber the main wing slightly with your fingers.
9. Using the dihedral angle gauge, make sure the dihedral angle for the main wing is 15°.
10. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.



TEST FLIGHT

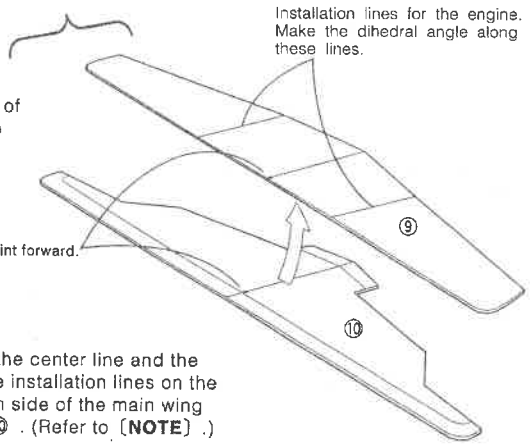
● Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.



2.
Aligning the noses flush, glue ① through ⑧ together in the order shown.

4.
Glue the horizontal tailplane ⑪ to the fuselage.

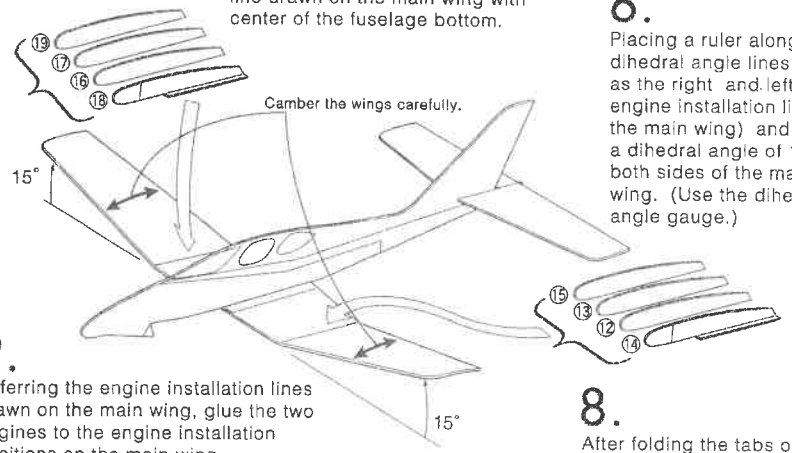
1.
Fold all tabs outward.



3.
Glue ⑩ to the underside of ⑨. When dry, cut off the protruding portions.

5.
Draw the center line and the engine installation lines on the bottom side of the main wing ⑨ + ⑩ . (Refer to 〔**NOTE**〕.)

7.
Glue the main wing (⑨ + ⑩) firmly to the fuselage aligning the center line drawn on the main wing with center of the fuselage bottom.



6.
Placing a ruler along the dihedral angle lines (same as the right and left engine installation lines on the main wing) and make a dihedral angle of 15° for both sides of the main wing. (Use the dihedral angle gauge.)

9.
Referring the engine installation lines drawn on the main wing, glue the two engines to the engine installation positions on the main wing.

8.
After folding the tabs of the engine parts, glue ⑫ , ⑬ , ⑭ and ⑮ together to make the left engine and ⑯ , ⑰ , ⑱ and ⑲ for the right engine

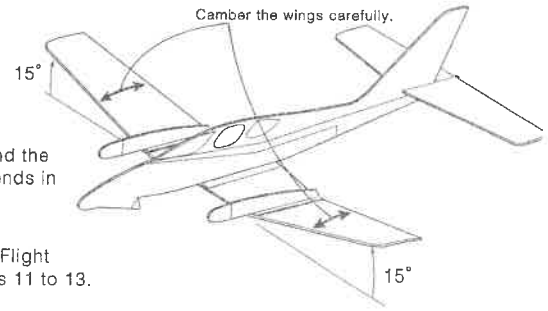
FINISHING TOUCHES

● Give the finishing touches to the plane after it driesthoroughly.

10. Camber the outer sides of the main wing from the engines carefully with your fingers.

11. Using the dihedral angle gauge, make sure the dihedral angle for the main wing is 15°.

12. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.



TEST FLIGHT

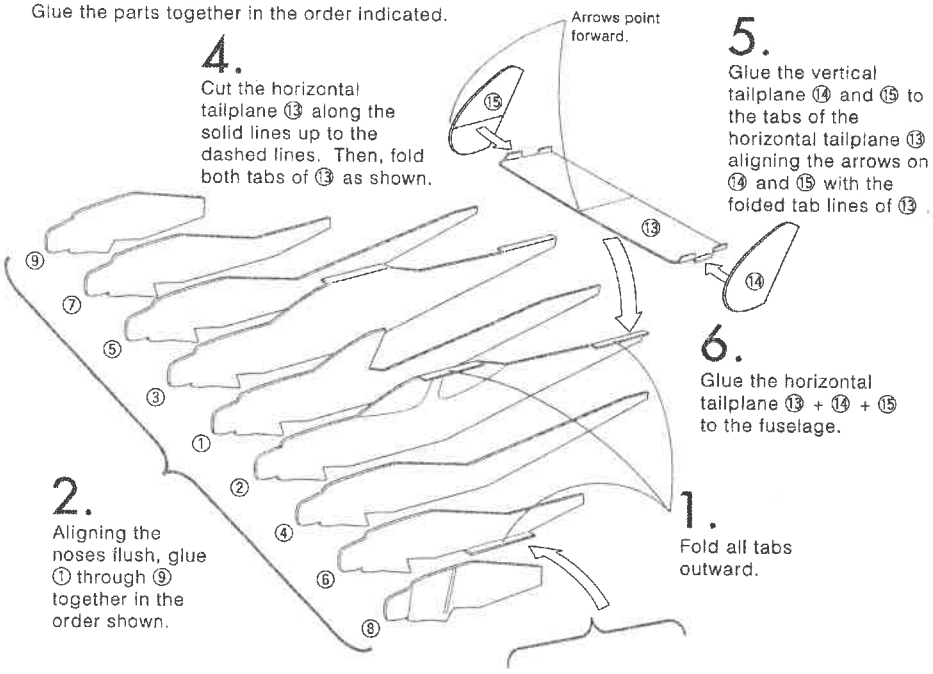
● Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.

〔**NOTE**〕
When gluing the fuselage and the engines to the main wing, the center line and the engine installation lines on the underside of the main wing are helpful for accurate assembly. Make pinholes at both ends of the center line and the engine installation lines on the printed side. Turn the main wing over and link the pinholes together with a ruler and then draw a center line and the engine installation lines.

in the opposite way, such as the S-17 model of Beechcraft. This so-called negative stagger plane has the advantage of good wider view from the cockpit.

GLUING INSTRUCTIONS

Glue the parts together in the order indicated.



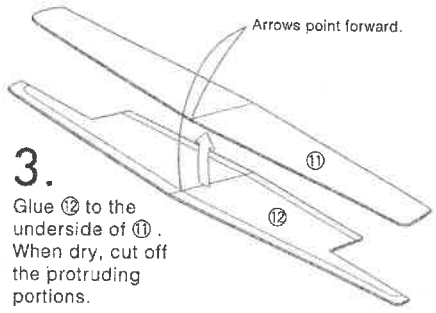
4. Cut the horizontal tailplane ⑬ along the solid lines up to the dashed lines. Then, fold both tabs of ⑬ as shown.

5. Glue the vertical tailplane ⑭ and ⑮ to the tabs of the horizontal tailplane ⑬ aligning the arrows on ⑭ and ⑮ with the folded tab lines of ⑬ .

6. Glue the horizontal tailplane ⑬ + ⑭ + ⑮ to the fuselage.

2. Aligning the noses flush, glue ① through ⑨ together in the order shown.

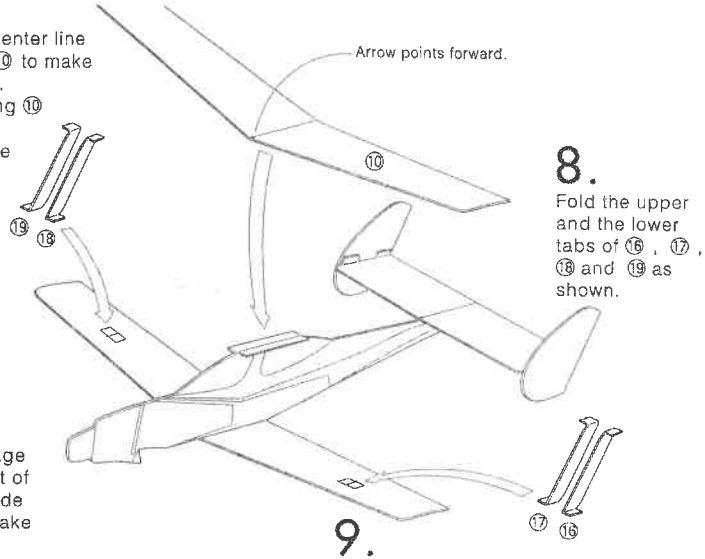
1. Fold all tabs outward.



7. Placing a ruler along the center line of the lower main wing (⑪ + ⑫), bend each side up individually to make a dihedral angle of 8° for both sides of the main wing. Then, glue the main wing (⑪ + ⑫) firmly to the fuselage. (Refer to 〔**NOTE**〕 on page 45.)

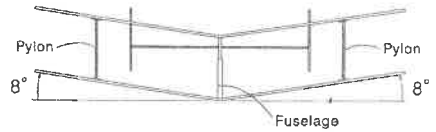
3. Glue ⑫ to the underside of ⑪ . When dry, cut off the protruding portions.

10. Place a ruler along the center line of the upper main wing ⑩ to make the dihedral angle of 8° . Then, glue the upper wing ⑩ to the fuselage. (Do not glue the upper part of the pylons to the wing yet.) View both the upper and lower main wings from the top, bottom, back and front to make sure they are parallel.

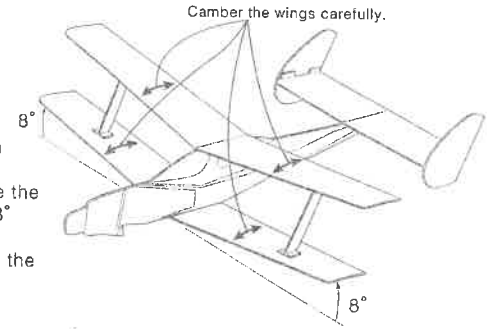


8. Fold the upper and the lower tabs of ⑯ , ⑰ , ⑱ and ⑲ as shown.

11. After glue on the upper main wing and the fuselage is dry, attach the top part of the pylons to the underside of the upper wing ⑩ . Make sure both the pylons and the fuselage are parallel as shown.



9. Glue ⑯ and ⑰ together and ⑱ and ⑲ together respectively to make pylons and glue the bottom of the pylons to the printed boxes on the lower main wing.



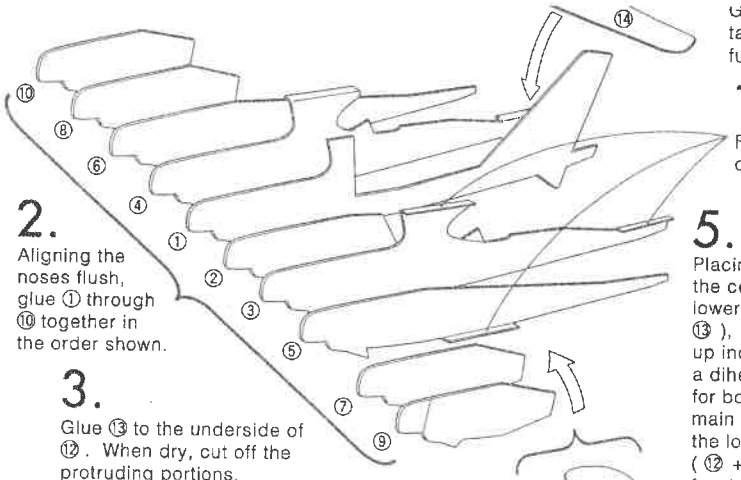
FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.

12. Camber both the upper and the lower main wings slightly with your fingers.
13. Using the dihedral angle gauge, make sure the dihedral angle for the lower main wing is 8°
14. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.

TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.



Glue the horizontal tailplane ⑭ to the fuselage.

1.

Fold all tabs outward.

2.

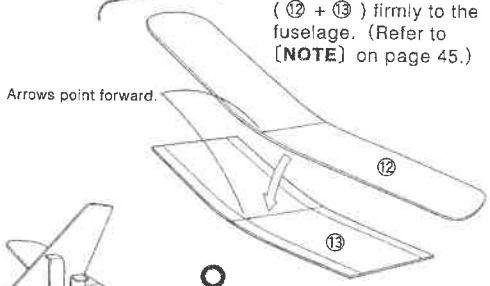
Aligning the noses flush, glue ① through ⑩ together in the order shown.

3.

Glue ⑬ to the underside of ⑫. When dry, cut off the protruding portions.

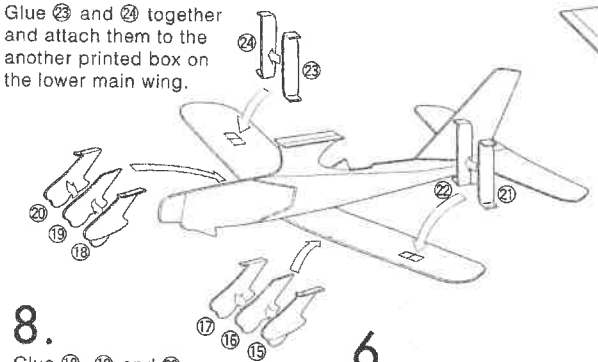
5.

Placing a ruler along the center line of the lower main wing (⑫ + ⑬), bend each side up individually to make a dihedral angle of 5° for both sides of the main wing. Then, glue the lower main wing (⑫ + ⑬) firmly to the fuselage. (Refer to **[NOTE]** on page 45.)



10.

Glue ㉓ and ㉔ together and attach them to the another printed box on the lower main wing.



9.

Glue ㉑ and ㉒ together to make a pylon and glue the bottom of the pylon to the printed box on the lower main wing.

8.

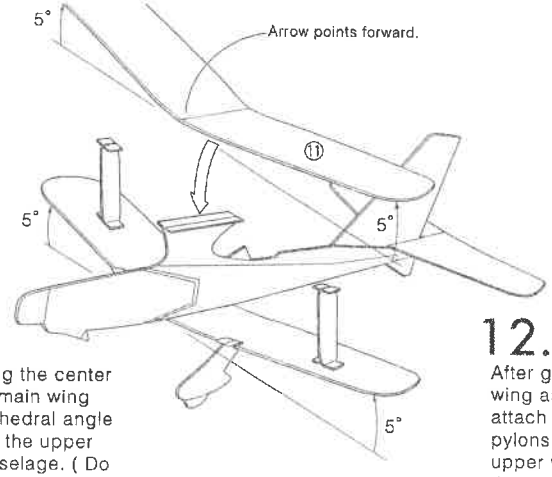
Glue ⑱ ,⑲ and ⑳ together and attach them to the right lower main wing in the same manner as the instructions **6** and **7**.

6.

Glue ⑮ , ⑯ and ⑰ together to make a landing gear and attach them to the underside of the left lower main wing using the line on the wing as a guide.

7.

Fold the protruding front part of the tab over the top of the wing and glue on.

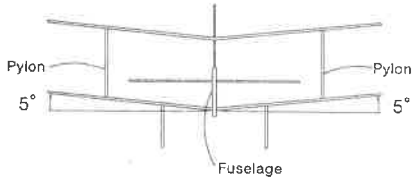


11.

Place a ruler along the center line of the upper main wing ⑪ to make the dihedral angle of 5° . Then, glue the upper wing ⑪ to the fuselage. (Do not glue the upper part of the pylons to the wing yet.) View both the upper and lower main wings from the top, bottom, back and front to make sure they are parallel.

12.

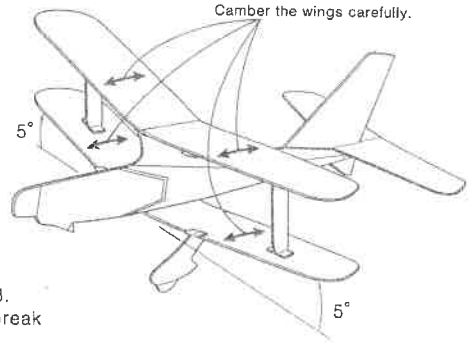
After glue on the upper main wing and the fuselage is dry, attach the top part of the pylons to the underside of the upper wing ⑪ . Make sure the pylons and the fuselage are parallel as shown.



FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.

13. Camber both the upper and the lower main wings slightly with your fingers.
14. Using the dihedral angle gauge, make sure the dihedral angle for the lower main wing is 5° .
15. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings. Make sure both landing gears are completely parallel to the vertical line of the fuselage.

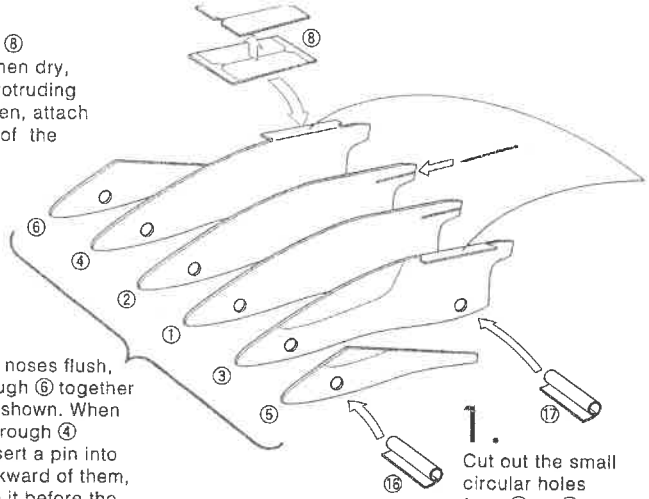


TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13. When test flying the plane, be careful or it may break as the structure of Bi-plane is slightly complex.

7.

Glue ⑦ and ⑧ together. When dry, cut of the protruding portions. Then, attach it to the top of the fuselage.



2.

Fold all tabs outward.

3.

Aligning the noses flush, glue ① through ⑥ together in the order shown. When gluing ① through ④ together, insert a pin into the slot backward of them, then remove it before the glue dries thoroughly.

6.

Do the same procedure to part ⑰ as in **5** .

1.

Cut out the small circular holes from ① to ⑥ with a cutter.

4.

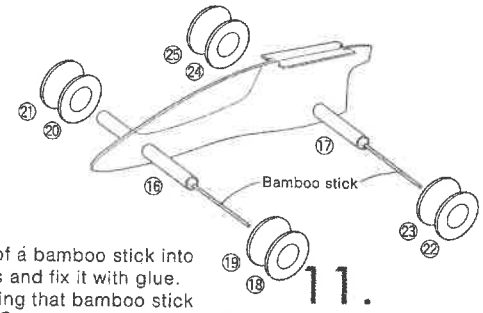
Adjust the shape of the cut-out holes on the fuselage with the cutter.

5.

Making sure the center marks of ⑯ come outside, apply glue on ⑯ and roll ⑯ into a cylinder so that a bamboo stick can revolve easily in it. Then, insert the cylinder into the hole of the fuselage to meet the center of the cylinder with the fuselage and fix them with glue.

8.

Glue together each two wheel parts, ⑱ and ⑲ , ⑳ and ㉑ , ㉒ and ㉓ and then, ㉔ and ㉕ to assemble 4 wheels. Make sure each printed side can be seen. Next, make a small hole at the center of each wheel with an awl to pass the bamboo stick.



9.

Putting the bamboo stick on the shaft gauge, cut it with a cutter in the same length as the gauge to make wheel shaft. Do the same procedure to the another bamboo stick.

10.

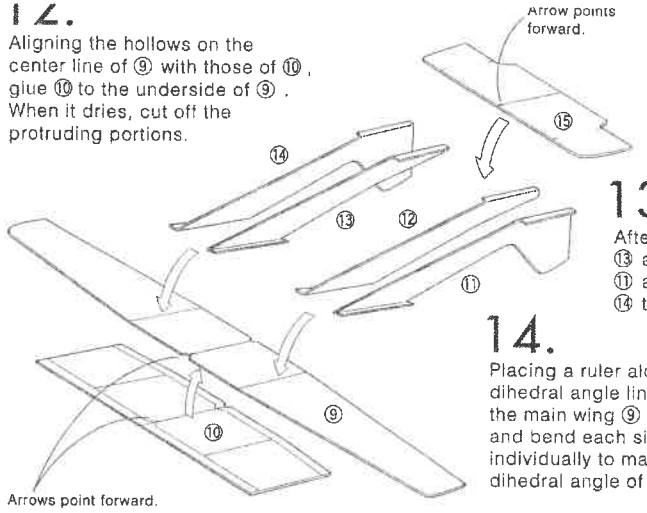
Insert one edge of a bamboo stick into one of the wheels and fix it with glue. Then, after inserting that bamboo stick into the cylinder ⑯ , put the other wheel into another edge of ⑯ and fix it with glue. Make sure that the wheels revolve smoothly in the cylinder.

11.

Use the same procedure as **10** for the other two wheels and the cylinder ⑰ .

12.

Aligning the hollows on the center line of ⑨ with those of ⑩ , glue ⑩ to the underside of ⑨ . When it dries, cut off the protruding portions.



16.

Glue the horizontal tailplane ⑮ to the top tabs of ⑪ + ⑫ and ⑬ + ⑭ .

13.

After folding the tabs of ⑪, ⑫ , ⑬ and ⑭ as shown, glue each ⑪ and ⑫ together and ⑬ and ⑭ together.

14.

Placing a ruler along the dihedral angle lines of the main wing ⑨ + ⑩ and bend each side up individually to make a dihedral angle of 12° .

15.

Glue ⑪ + ⑫ and ⑬ + ⑭ onto the dihedral angle lines of the mair wing respectively. (Refer to 【**NOTE**】 .)

17.

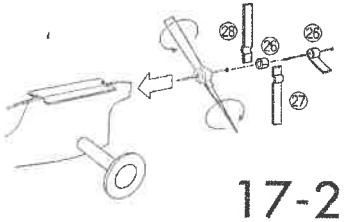
Assemble the propeller.

17-1.

To make the propeller hub (the part which the propeller shaft passes through) , wrap the ribbon ㉖ around the pin applying glue on the ribbon. After making sure that the hut around the pin revolves smoothly, pull the pin out temporarily.

17-4.

After inserting the pin with the propeller into the back end of the fuselage, trim the propeller blades so that both blades are of equal length. The each end of the propeller should be in line with the bottom of the fuselage when it revolves. Next, pull out the pin and remove the propeller.

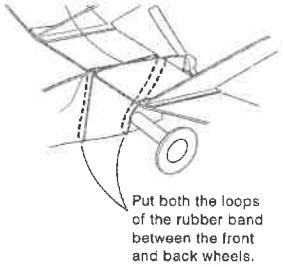


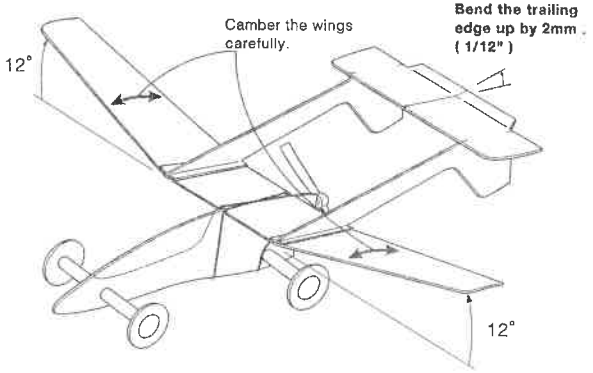
17-2.

Curve the end of both propeller blades (㉗ and ㉘) to fit around the hub ㉖ as shown. Wrap the blades around the hub and glue on.

17-3.

When dry, carefully twist the propeller blades in opposite directions as shown.





ASSEMBLING / FINISHING TOUCHES

● Assemble the plane and give the finishing touches to the plane after it dries thoroughly.

18. Camber both ends of the main wing from the dihedral angle lines.

19. Using the dihedral angle gauge, make sure the dihedral angle for the main wing is 12° .

20. **Bend the trailing edges of horizontal tailplane up by 2mm (1/12") as shown.**

21. Tie the main wing on the fuselage with a rubber band as shown.

22. Make sure to align the center line of the main wing with that of the fuselage top.

23. Insert the pin with the propeller into the back of the fuselage.

24. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.

TEST FLIGHT

● Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13. When flying the paper airplane, launch by hand and fly over lawns or grassy areas as it is apt to break easily .

〔NOTE〕

Make pinholes at both ends of the dihedral angle lines on the top side of the main wing. Turn the main wing over, then link the pinholes together with a ruler and draw lines on the unprinted side of the main wing. You can install the back parts precisely by using those lines on the underside of the main wing as a guide.

3.

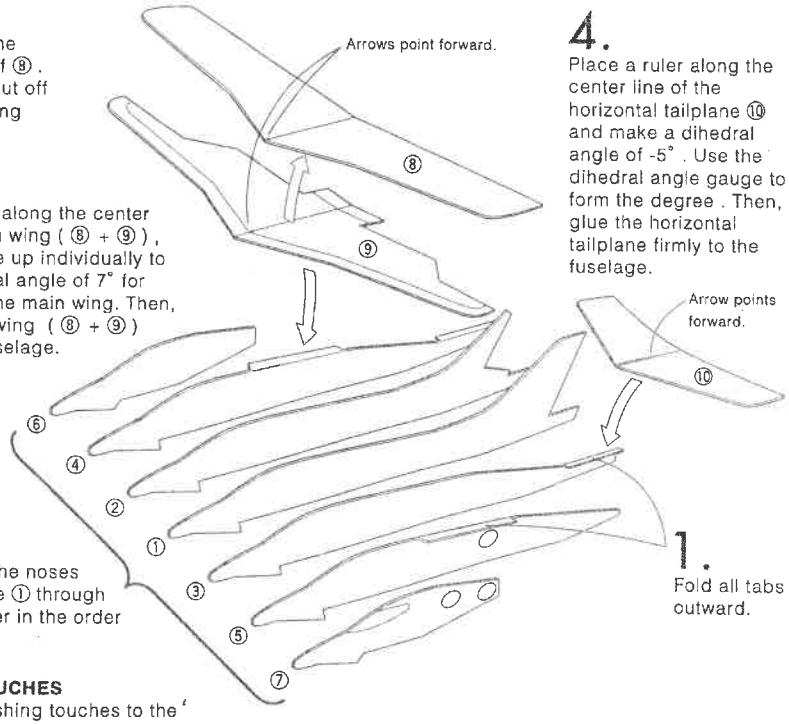
Glue ⑨ to the underside of ⑧ . When dry, cut off the protruding portions.

4.

Place a ruler along the center line of the horizontal tailplane ⑩ and make a dihedral angle of -5° . Use the dihedral angle gauge to form the degree . Then, glue the horizontal tailplane firmly to the fuselage.

5.

Placing a ruler along the center line of the main wing (⑧ + ⑨), bend each side up individually to make a dihedral angle of 7° for both sides of the main wing. Then, glue the main wing (⑧ + ⑨) firmly to the fuselage.



2.

Aligning the noses flush, glue ① through ⑦ together in the order shown.

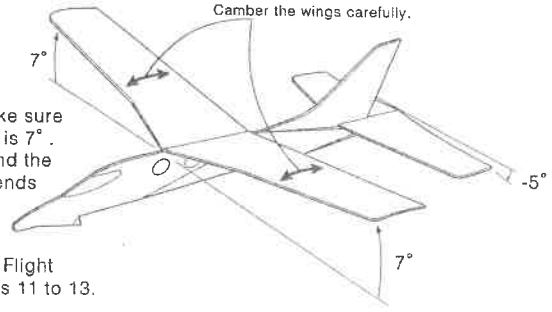
1.

Fold all tabs outward.

FINISHING TOUCHES

● Give the finishing touches to the plane after it dries thoroughly.

6. Camber the main wing slightly with your fingers.
7. Using the dihedral angle gauge, make sure the dihedral angle for the horizontal tailplane is minus 5°
8. Using the dihedral angle gauge, make sure the dihedral angle for the main wing is 7° .
9. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.



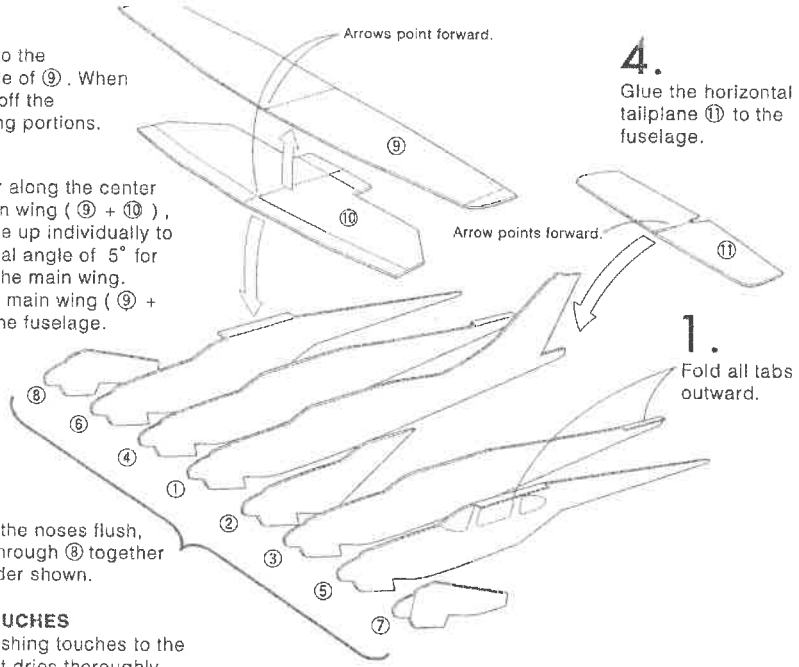
TEST FLIGHT

● Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.

3. Glue ⑩ to the underside of ⑨. When dry, cut off the protruding portions.

4. Glue the horizontal tailplane ⑪ to the fuselage.

5. Placing a ruler along the center line of the main wing (⑨ + ⑩), bend each side up individually to make a dihedral angle of 5° for both sides of the main wing. Then, glue the main wing (⑨ + ⑩) firmly to the fuselage.



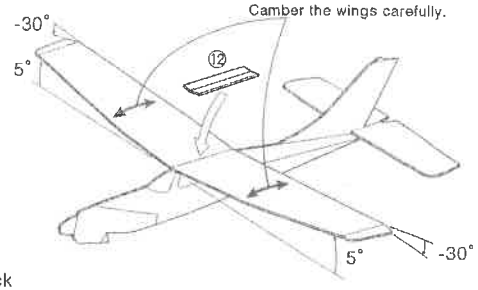
1. Fold all tabs outward.

2. Aligning the noses flush, glue ① through ⑧ together in the order shown.

FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.

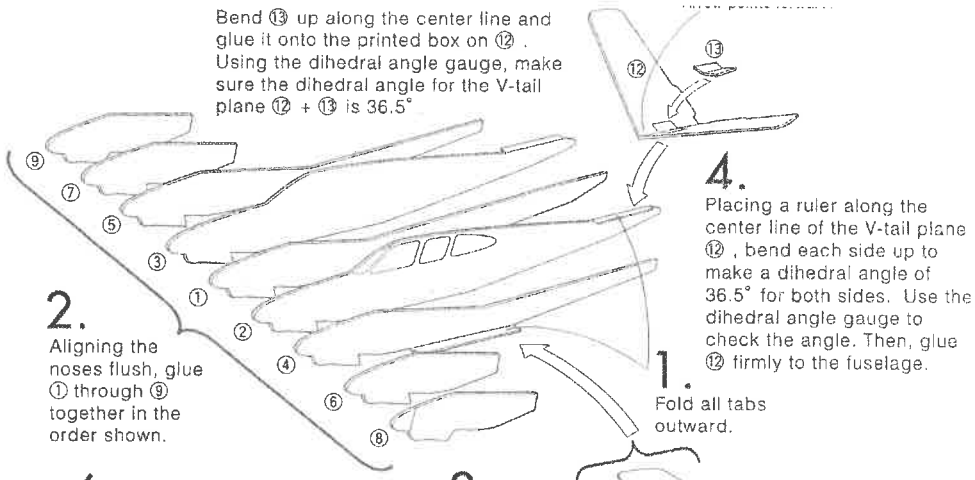
6. Bend both edges of the main wing downward along the lines by 30°. Using the dihedral angle gauge to check the angle.
7. Camber the main wing slightly with your fingers.
8. Using the dihedral angle gauge, make sure the dihedral angle for the main wing is 5°.
9. Fold ⑫ up slightly along the center line and glue it onto the center of the main wing. Check again that the dihedral angle for the main wing is 5°.
10. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.



TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.

Bend ⑬ up along the center line and glue it onto the printed box on ⑫. Using the dihedral angle gauge, make sure the dihedral angle for the V-tail plane ⑫ + ⑬ is 36.5°



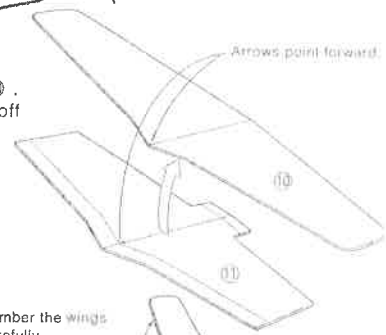
4. Placing a ruler along the center line of the V-tail plane ⑫, bend each side up to make a dihedral angle of 36.5° for both sides. Use the dihedral angle gauge to check the angle. Then, glue ⑫ firmly to the fuselage.

2. Aligning the noses flush, glue ① through ⑨ together in the order shown.

1. Fold all tabs outward.

6. Placing a ruler along the center line of the main wing (⑩ + ⑪), bend each side up individually to make a dihedral angle of 12° for both sides of the main wing. Then, glue the main wing (⑩ + ⑪) firmly to the fuselage. (Refer to [**NOTE**] on page 45.)

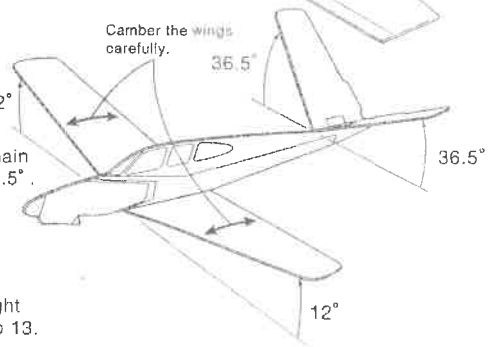
3. Glue ⑪ to the underside of ⑩. When dry, cut off the protruding portions.



FINISHING TOUCHES

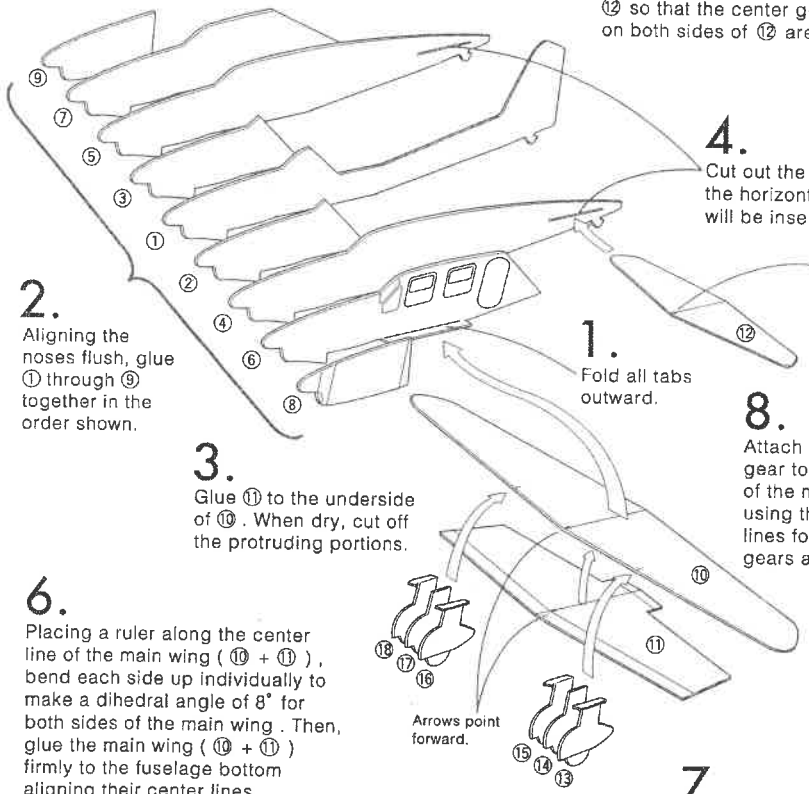
- Give the finishing touches to the plane after it dries thoroughly.

7. Camber the main wing slightly with your fingers.
8. Placing the dihedral angle gauge at the underside of the main wing and the upper side of the V- tail plane, make sure the dihedral angle for the main wing is 12° and for the V-tail plane is 36.5°.
9. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.



TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for V-tail Planes on pages 11 to 13.



2.
Aligning the noses flush, glue ① through ⑨ together in the order shown.

3.
Glue ⑪ to the underside of ⑩ . When dry, cut off the protruding portions.

4.
Cut out the slit into which the horizontal tailplane will be inserted.

5.
Insert the horizontal tailplane ⑫ into the slit, then apply glue to fix ⑫ so that the center guidelines on both sides of ⑫ are visible.

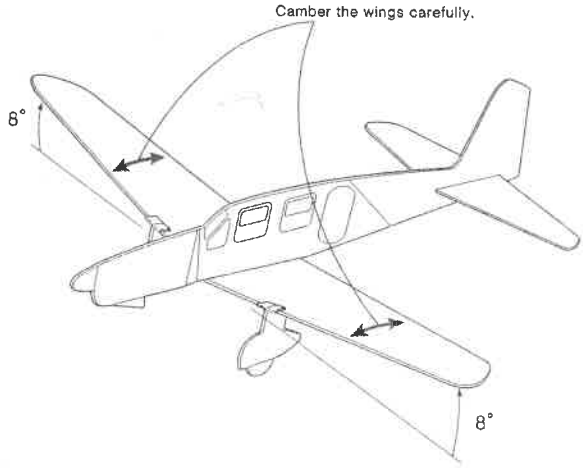
6.
Placing a ruler along the center line of the main wing (⑩ + ⑪), bend each side up individually to make a dihedral angle of 8° for both sides of the main wing . Then, glue the main wing (⑩ + ⑪) firmly to the fuselage bottom aligning their center lines.
(Refer to 〔**NOTE**〕 on page 45 .)

7.
Glue ⑬ , ⑭ and ⑮ together and ⑯ , ⑰ and ⑱ together respectively to make landing gears.

1.
Fold all tabs outward.

8.
Attach each landing gear to the underside of the main wing using the installation lines for the landing gears as a guide.

7.
Fold the protruding front part of the tab over the top of the wing and glue on.



FINISHING TOUCHES

● Give the finishing touches to the plane after it dries thoroughly.

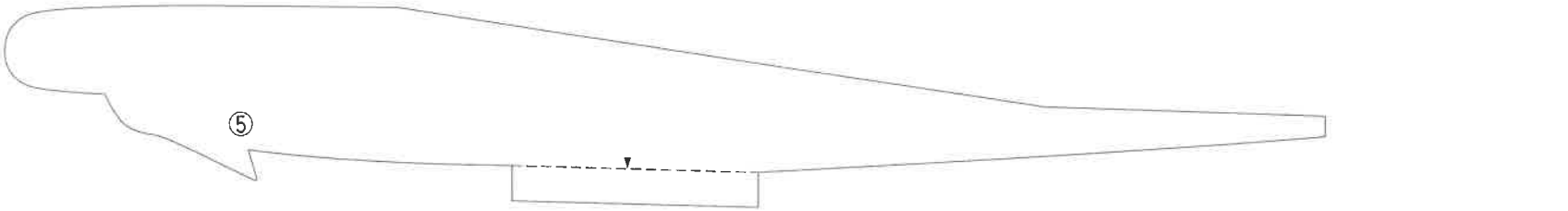
10. Camber the main wing slightly with your fingers.

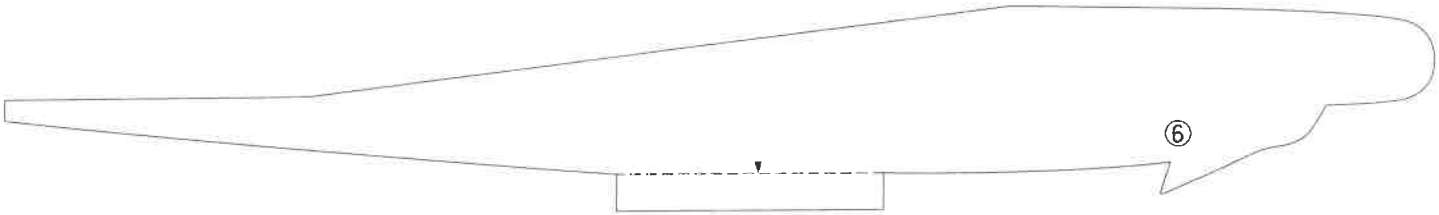
11. Using the dihedral angle gauge, make sure the dihedral angle for the main wing is 8° .

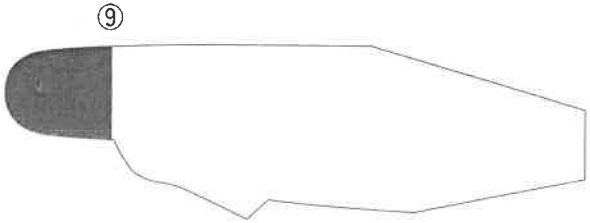
12. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings. Make sure both landing gears are completely parallel with the vertical line of the fuselage.

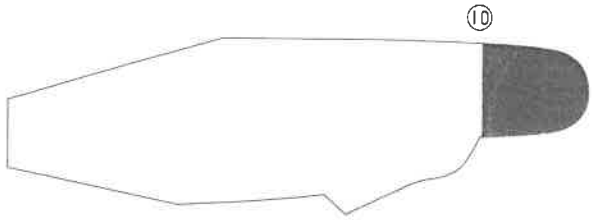
TEST FLIGHT

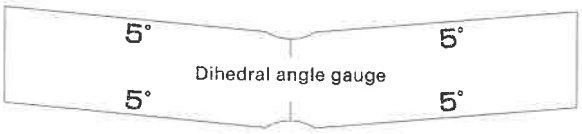
● Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.









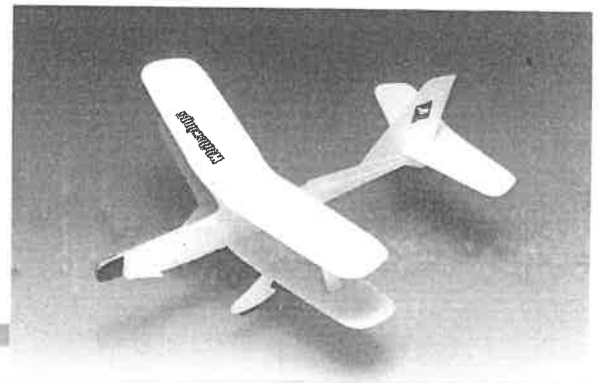


Fold with dashed line inside.
Arrows point forward.

Bend-resistant direction

Whitewings®

Light Plane 319 Open Cockpit Bi-plane



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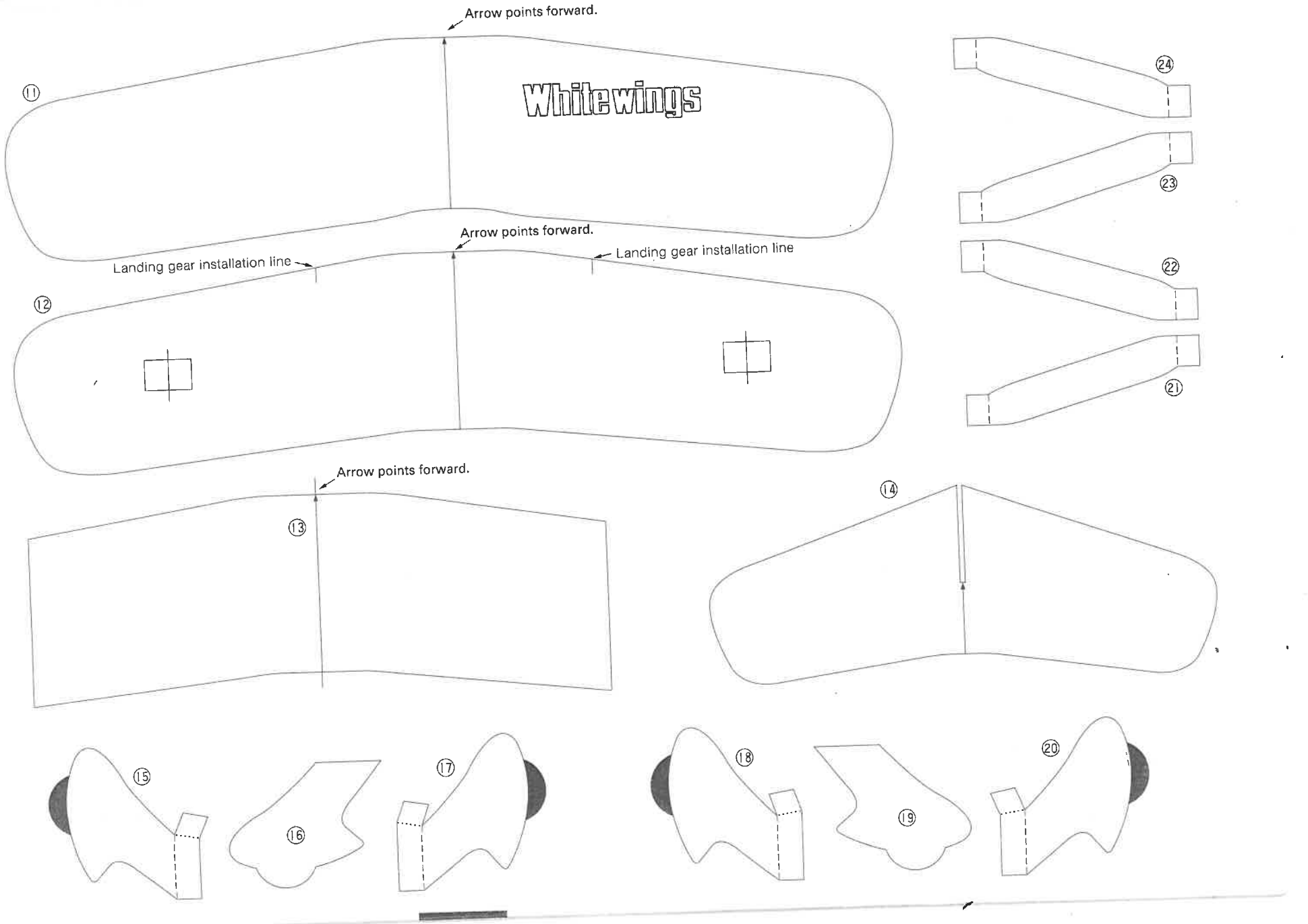
Arrow points forward.
⑪
Whitewings
Arrow points forward.
Landing gear installation line
Landing gear installation line
⑫
Arrow points forward.
⑬
⑭
⑮
⑯
⑰
⑱
⑲
⑳
㉑
㉒
㉓
㉔

⑨

Arrow points forward.

Whitewings

⑫

Arrow points forward.

Arrow points forward.

⑩

⑪

Dihedral angle gauge

−30°

5°

5°

Fold with dashed line inside.

Arrows point forward.

Bend-resistant direction

Whitewings®

Cessna 210 "CENTURION"

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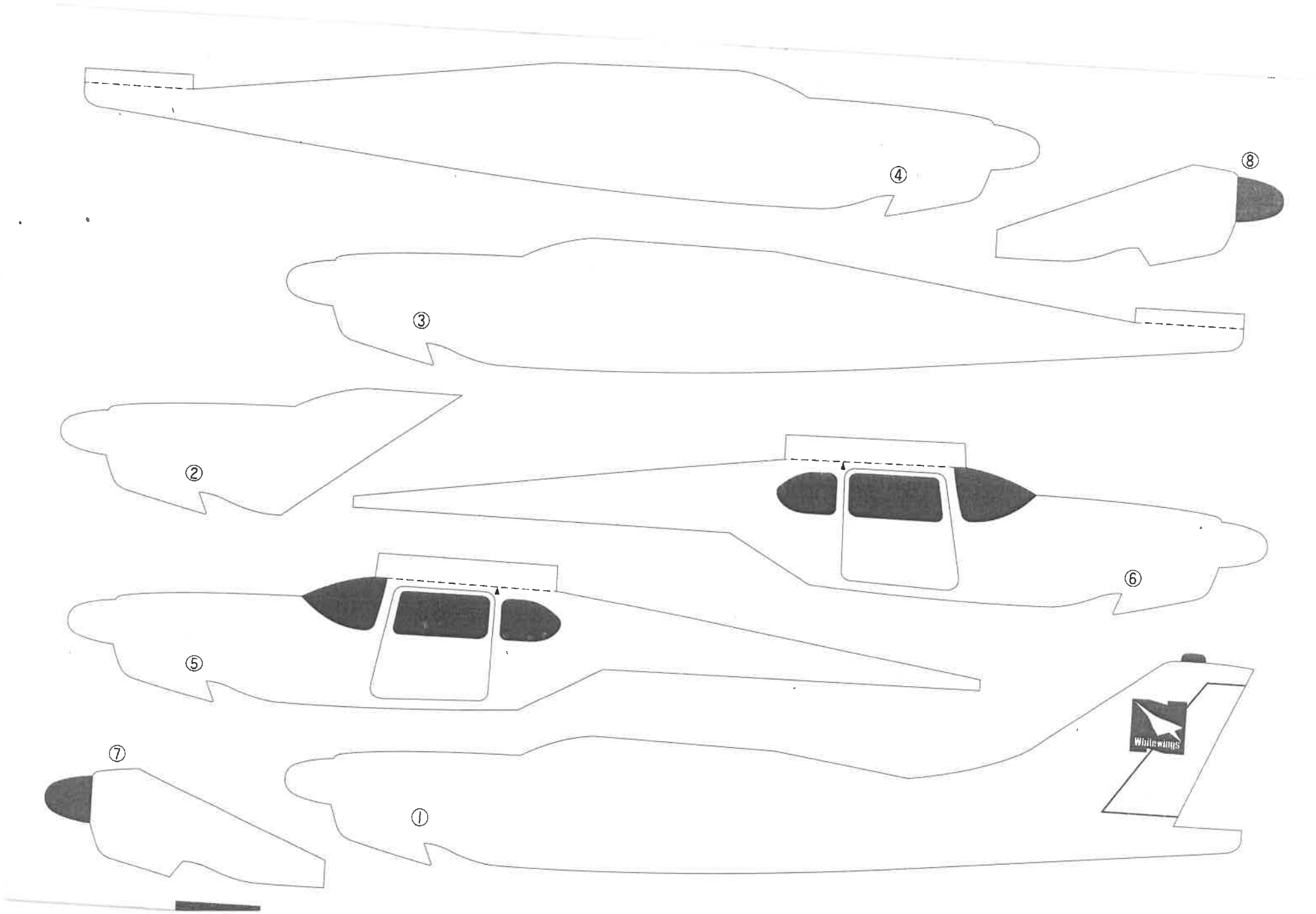
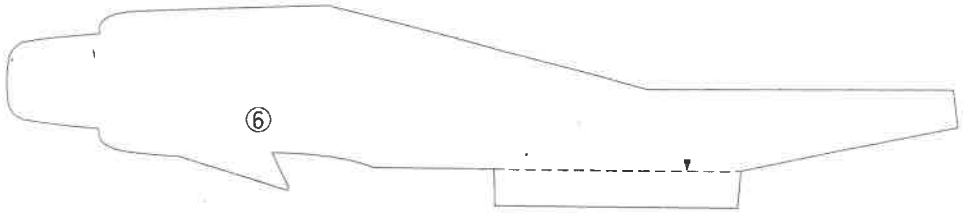
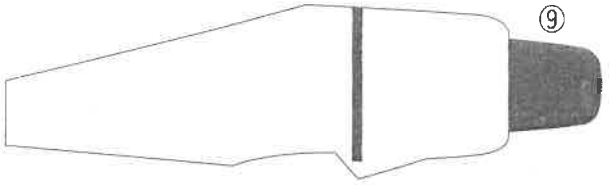
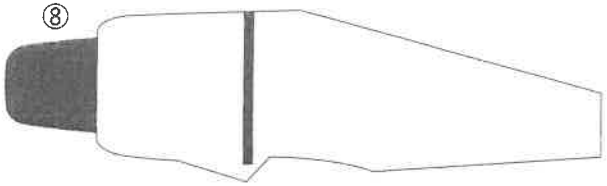
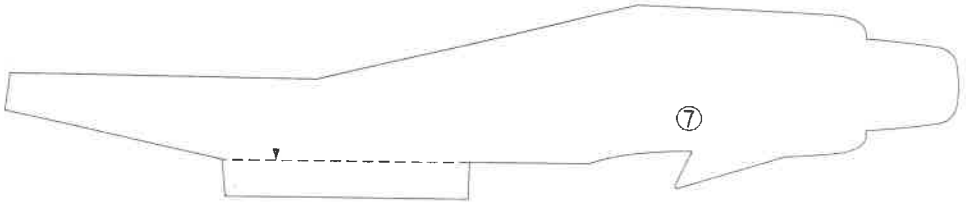
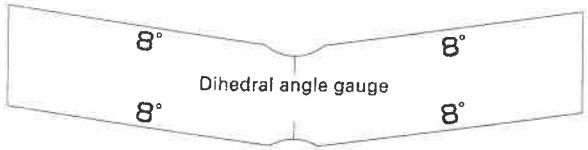

④
⑧
③
②
⑥
⑤
⑦
①
Whitewings











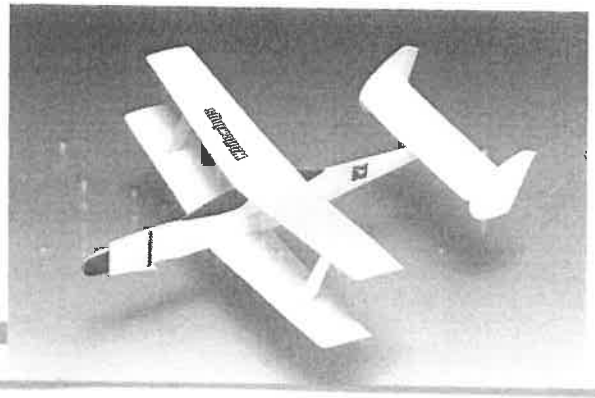
------ Fold with dashed line inside.

↑ Arrows point forward.

Bend-resistant direction

Whitewings®

Light Plane 317 Negative Stagger Bi-plane



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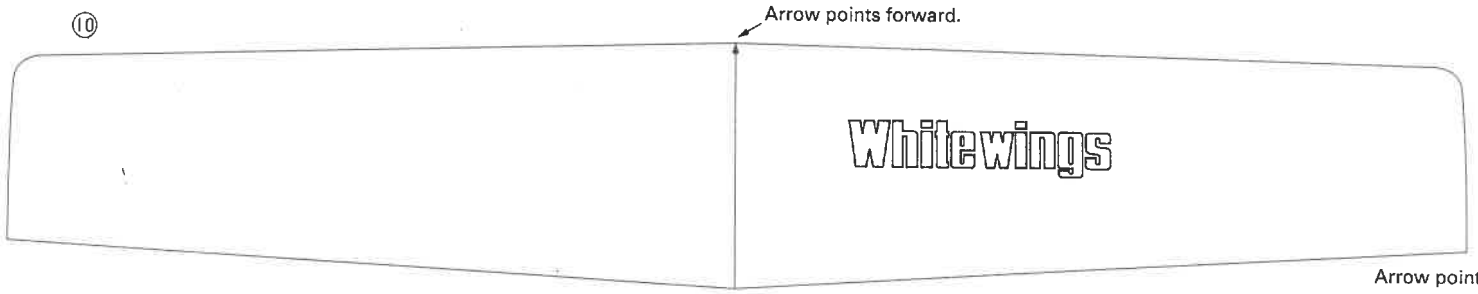
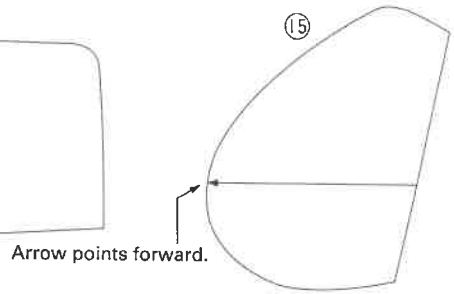
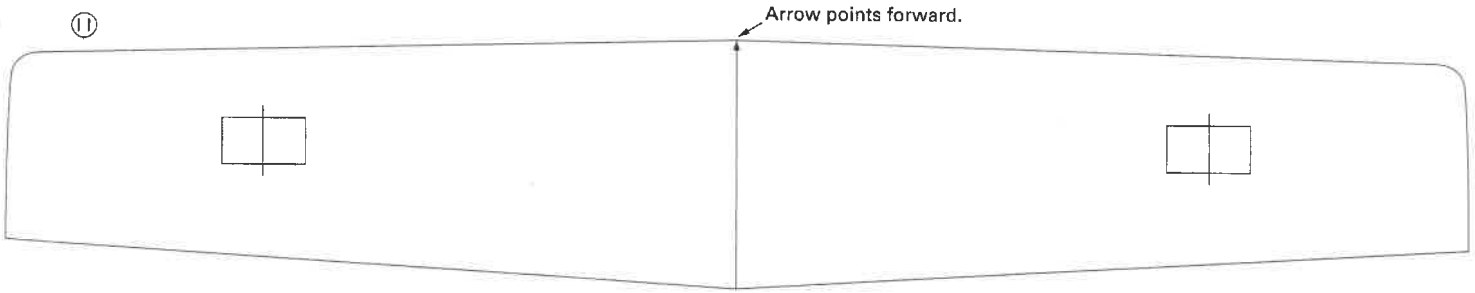
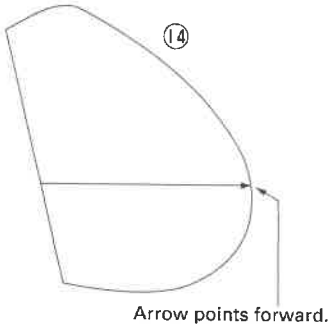
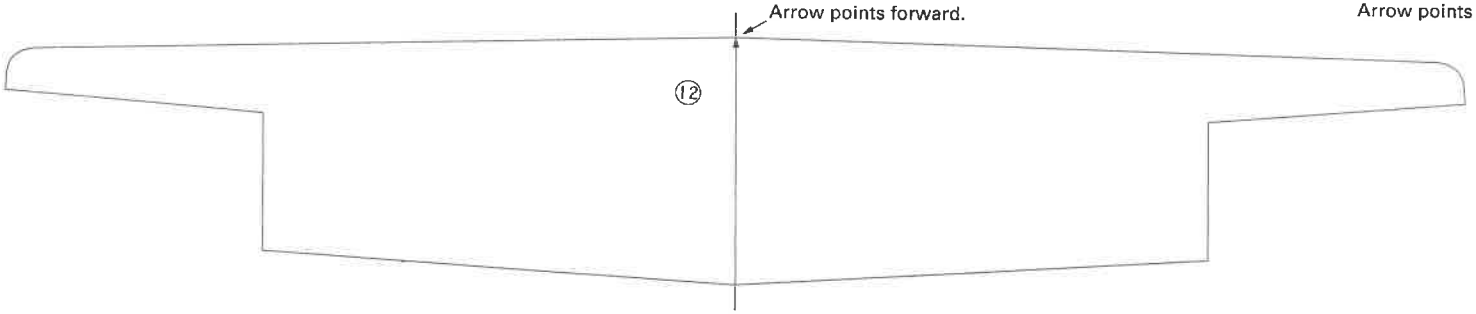
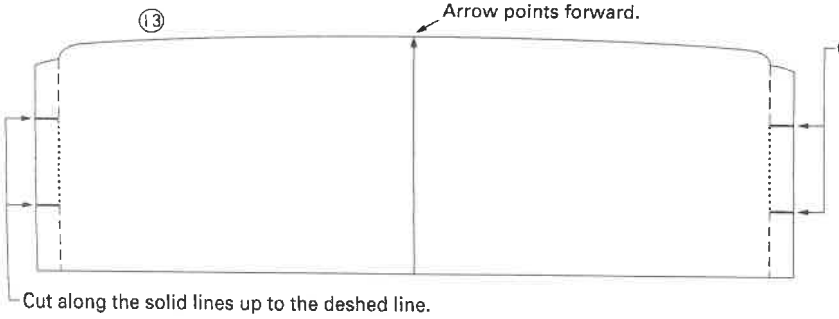

⑩
Arrow points forward.
Whitewings

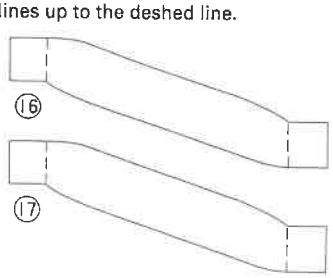

⑮
Arrow points forward.

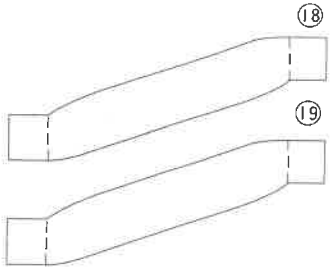

⑪
Arrow points forward.

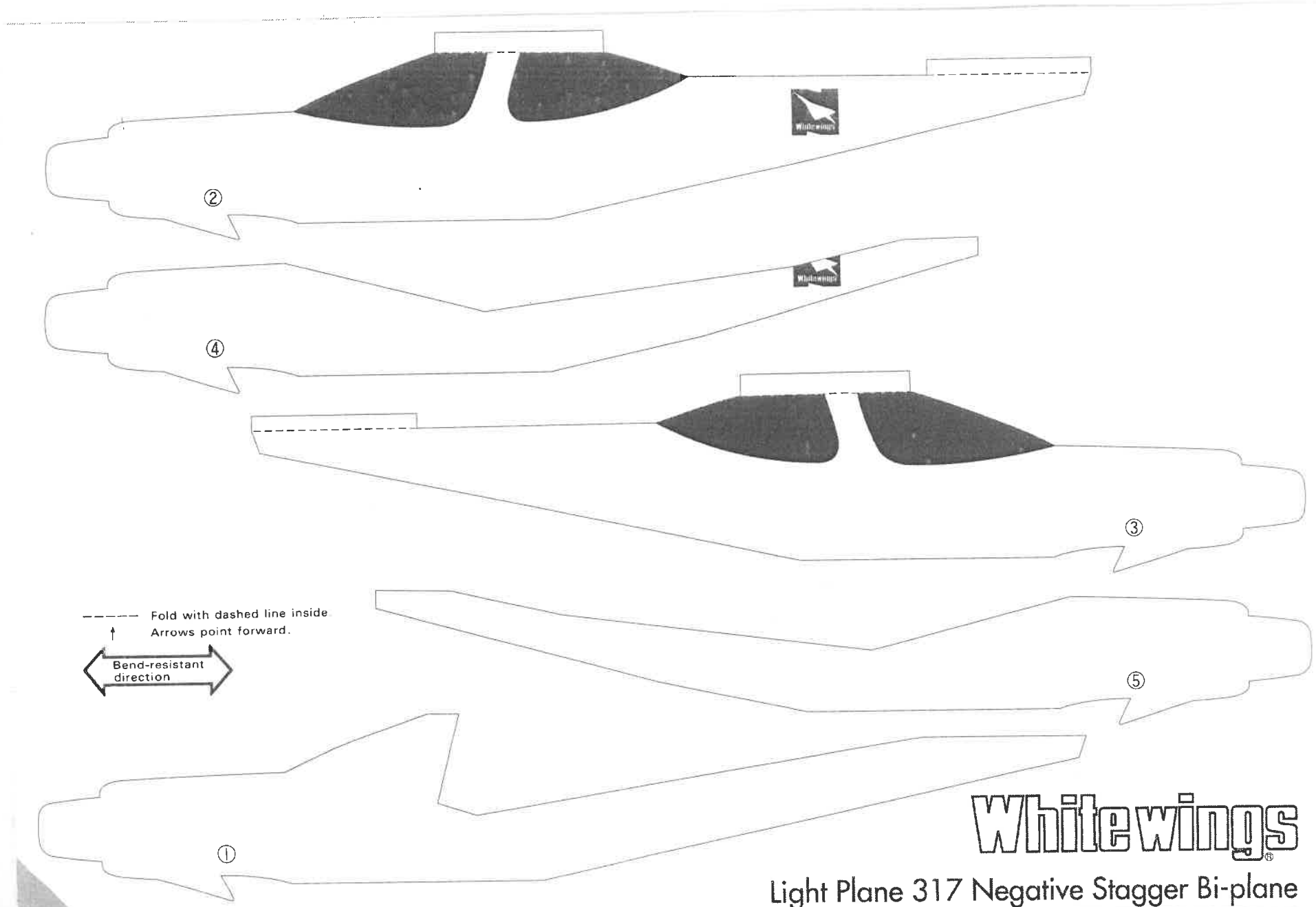

⑭
Arrow points forward.


Arrow points forward.
⑫


⑬
Arrow points forward.
Cut along the solid lines up to the deshed line.
Cut along the solid lines up to the deshed line.


⑯
⑰


⑱
⑲



Whitewings®

Light Plane 317 Negative Stagger Bi-plane

N

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• Make the dihedral angle along this line. • Installation line for the pylon.

Arrow points forward.

• Make the dihedral angle along this line. • Installation line for the pylon.

⑨

Whitewings

⑦

Arrow points forward.

⑩

Arrow points forward.

⑧

Arrow points forward.

⑯

Center Marks

Roll from either direction.

Center Marks

⑰

Roll from either direction.

Center Marks

Guide line for applying the pylon to this part.

⑮

Arrow points forward.

Guide line for applying the pylon to this part.

12°

Dihedral angle gauge

⑯

Shaft gauge

Bend-resistant direction

Whitewings®

Light Plane 320 Sky Car

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Cut out the hole.
Cut out the hole.
Cut out the hole.

⑨

Arrow points forward.

Whitewings

⑪

⑲

⑰

⑯

⑱

Arrow points forward.

⑩

15°

Dihedral angle gauge

⑮

⑬

⑫

⑭

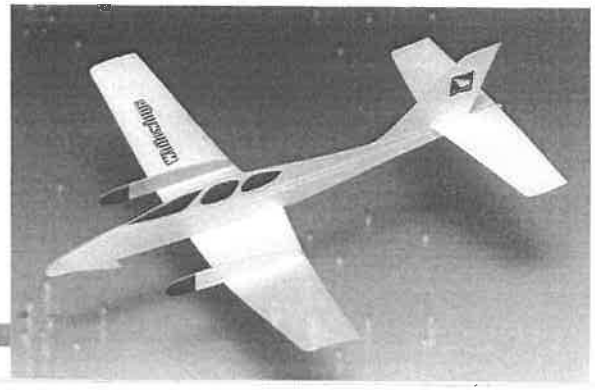
------ Fold with dashed line inside.

↑ Arrows point forward.

Bend-resistant direction

Whitewings®

Light Plane 316 Twin-Engine



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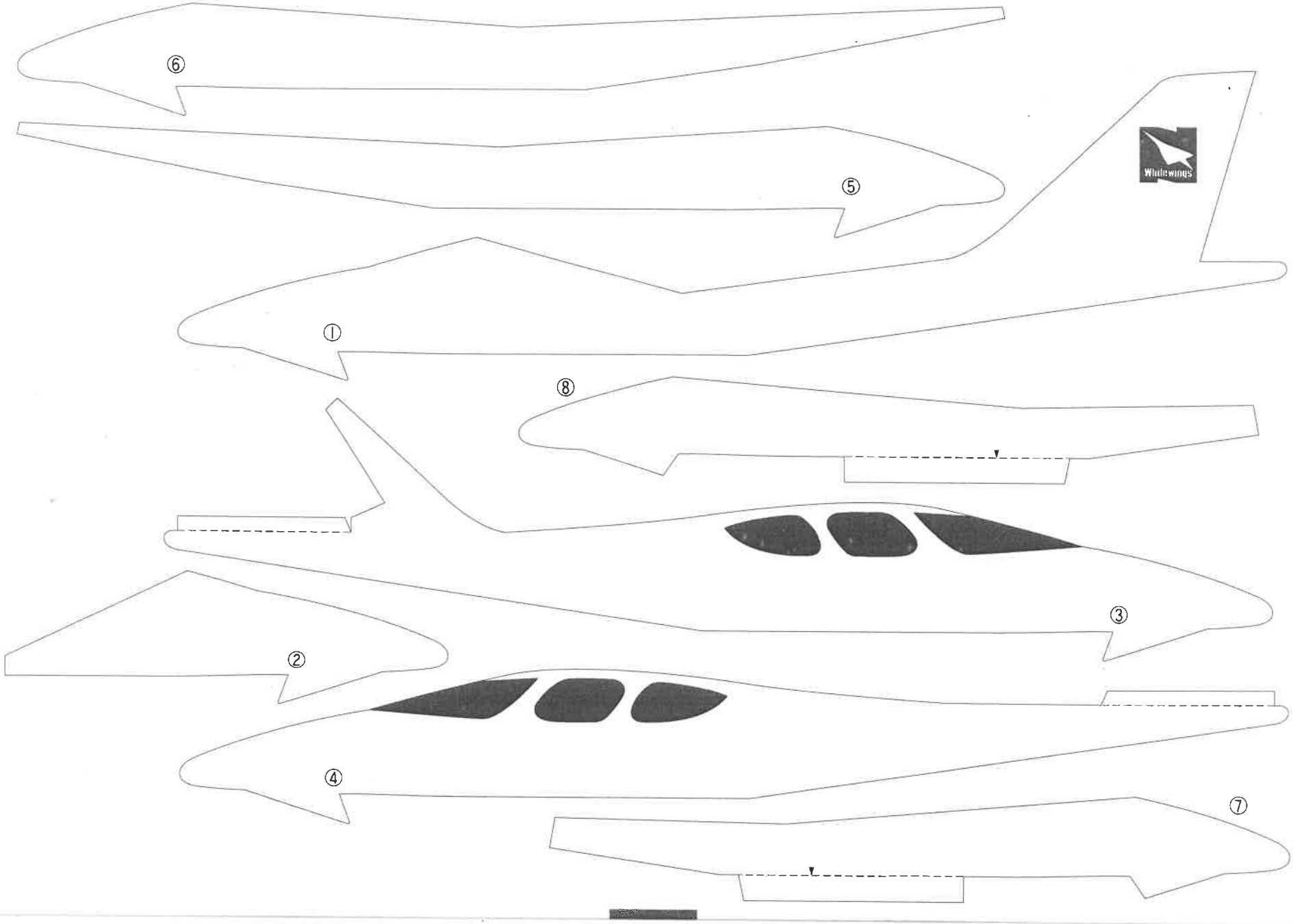

⑥
⑤
①
⑧
③
②
④
⑦

⑧

Arrow points forward.

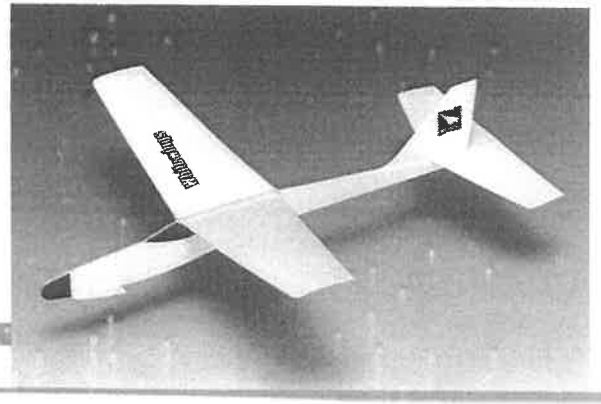
Whitewings

⑪ Arrow points forward.

Arrow points forward.

⑨

⑩



Fold with dashed line inside.

Arrows point forward.

Bend-resistant direction

Whitewings®

Light Plane 312 Cessna Type

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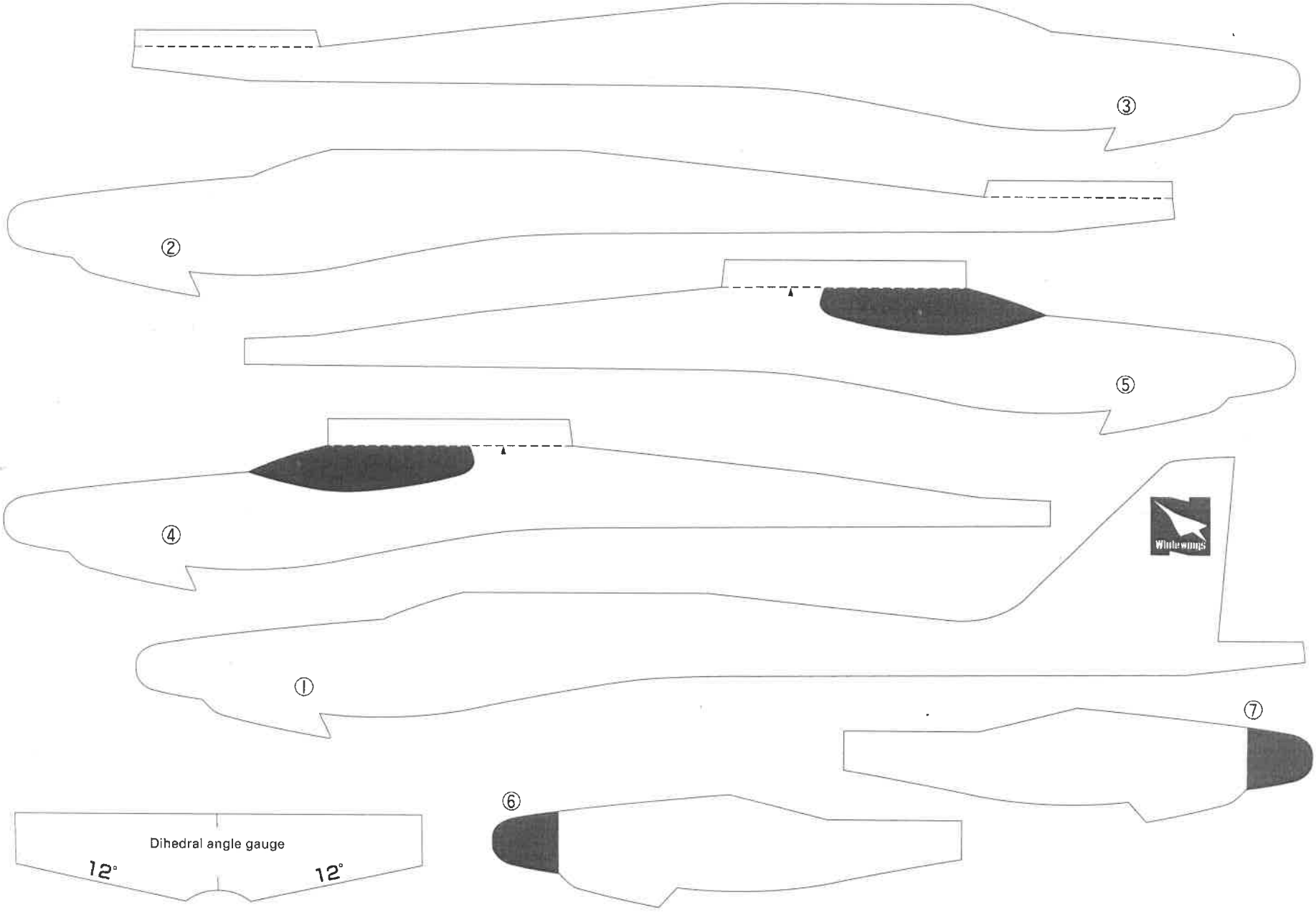

③
②
⑤
④
Whitewings
①
⑦
⑥
Dihedral angle gauge
12°
12°

Arrow points forward.

⑧

Whitewings

Arrow points forward.

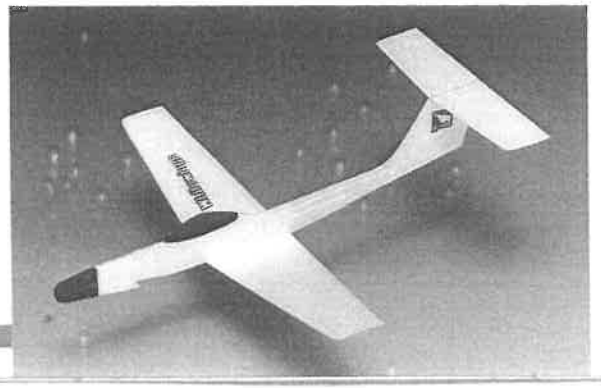
⑨

Arrow points forward.

⑩

13° 13°

Dihedral angle gauge



Fold with dashed line inside.

Arrows point forward.

Bend-resistant direction

Whitewings®

Light Plane 313 T-Tail

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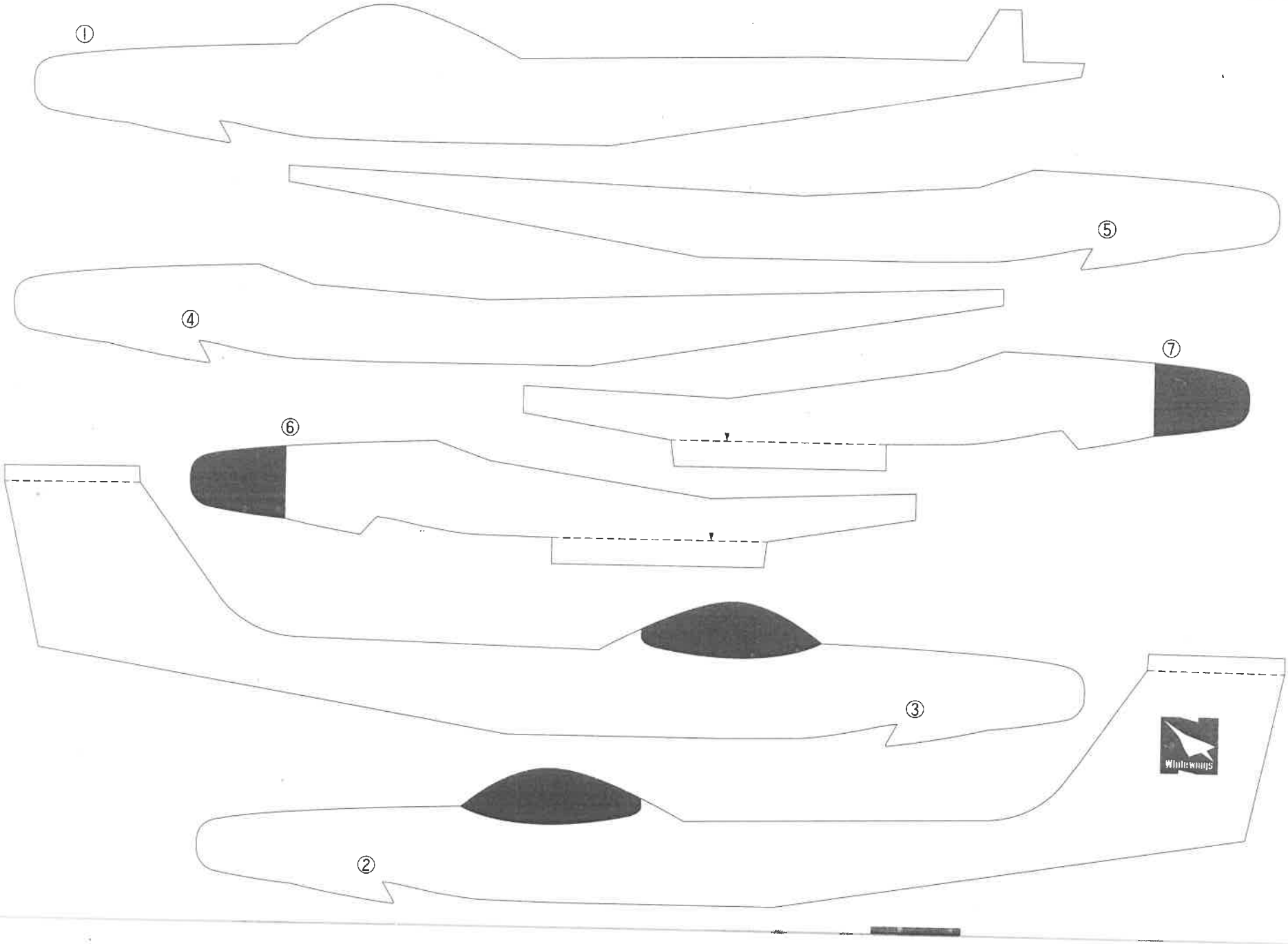
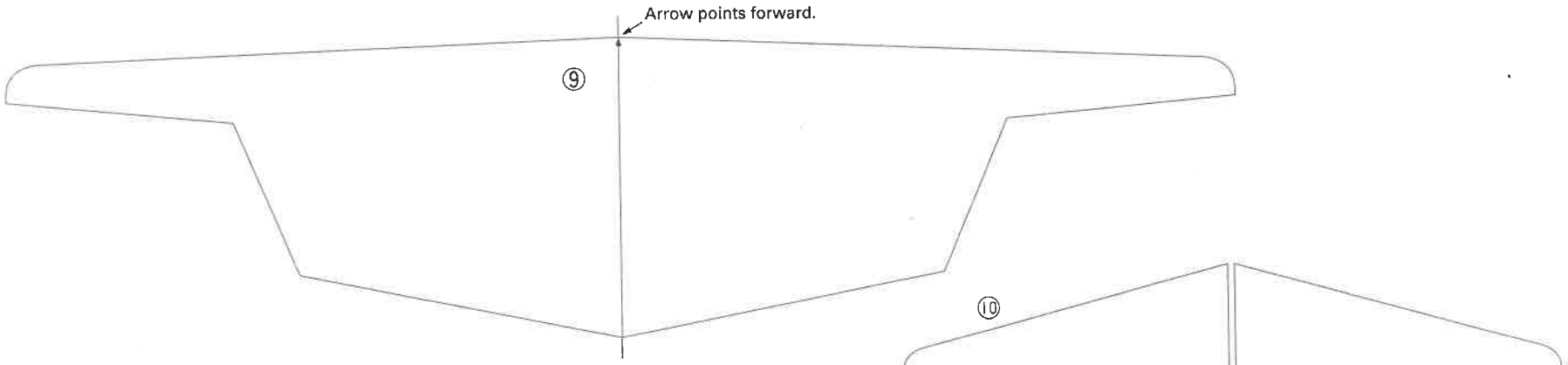
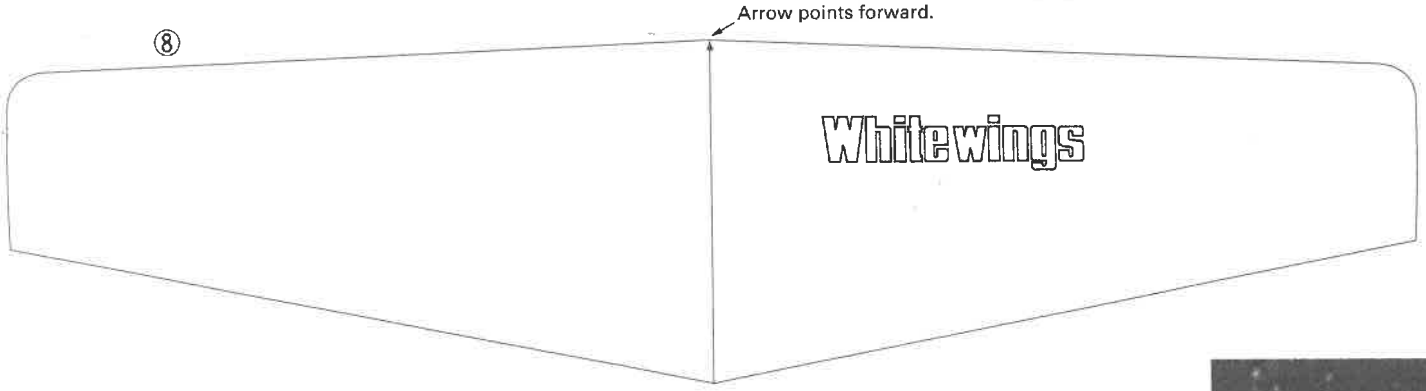
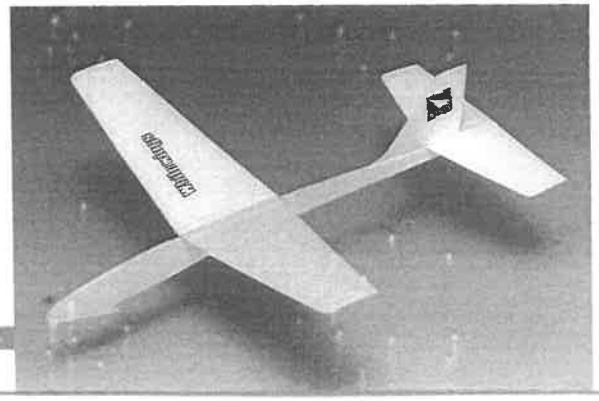

①
⑤
④
⑦
⑥
③
②
Whitewings







Whitewings®

Racer 546 Canary

------ Fold with dashed line inside

↑ Arrows point forward.

Bend-resistant direction

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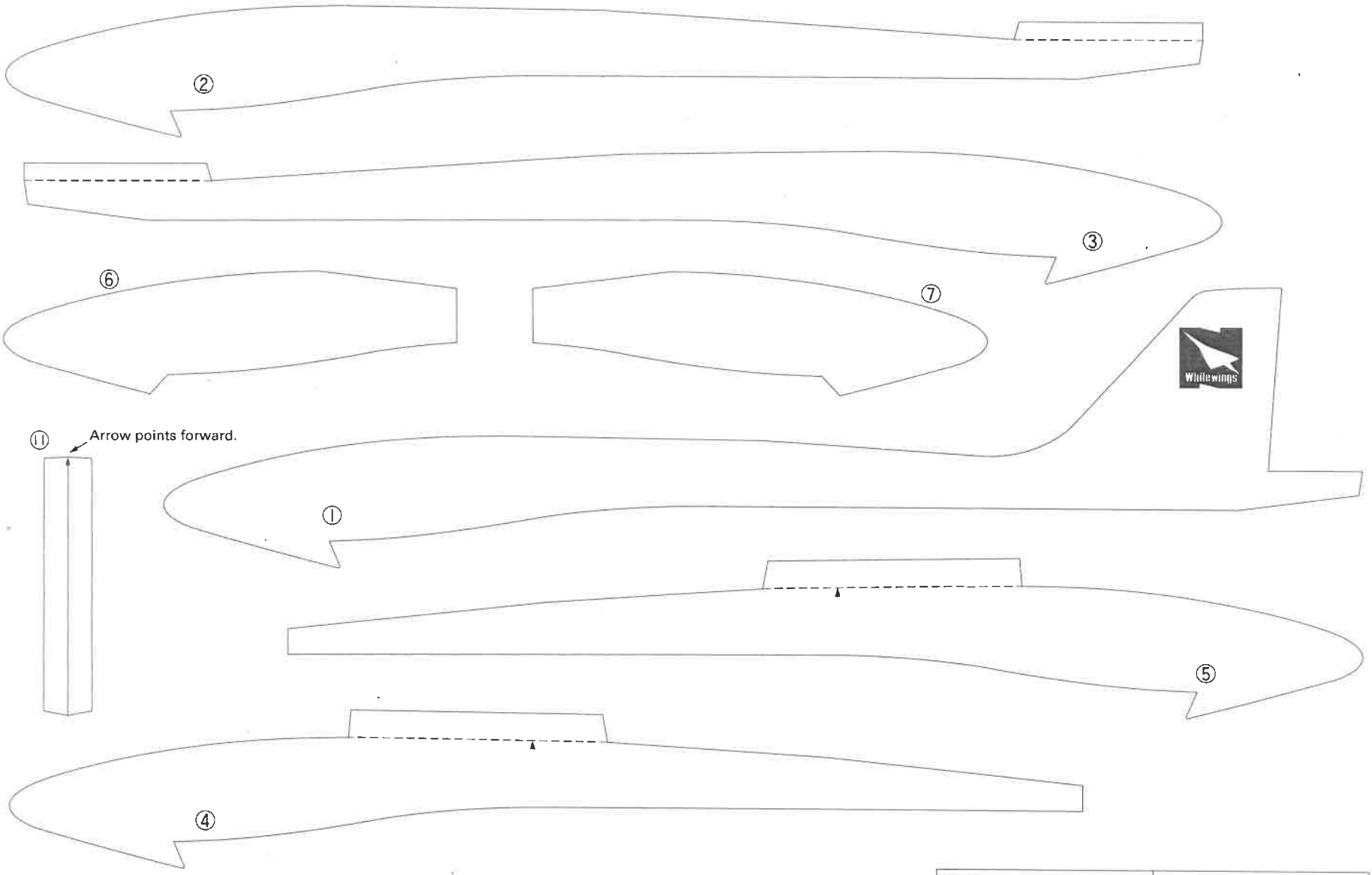

②
③
⑥
⑦
Whitewings
⑪
Arrow points forward.
①
⑤
④
Dihedral angle gauge
15°
15°

⑧

Arrow points forward.

Whitewings

⑪

Arrow points forward.

⑫

Arrow points forward.

Arrow points forward.

⑨

⑥

⑩

Arrow points forward.

⑦

Cut along the solid lines up to the deshed line.

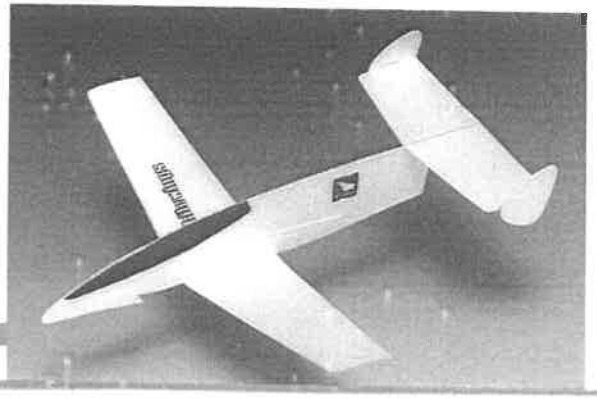
------ Fold with dashed line inside.

↑ Arrows point forward.

Bend-resistant direction

Whitewings®

Light Plane 315 Little Bonito



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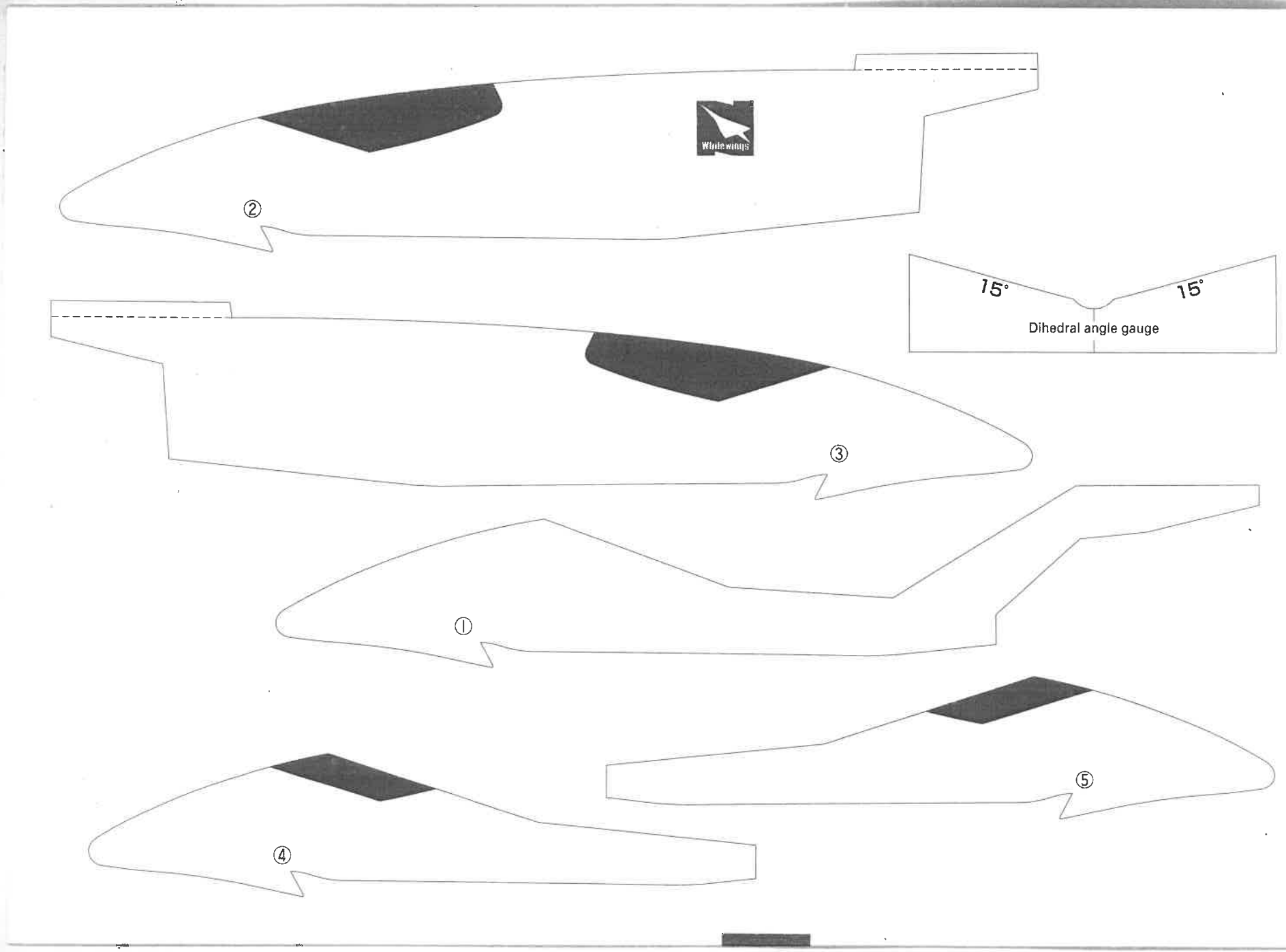

Wide wings
②
15°
15°
Dihedral angle gauge
③
①
⑤
④

⑨

Arrow points forward.

Whitewings

⑫ Arrow points forward.

Arrow points forward.

⑩

Dihedral angle gauge

15° 15°

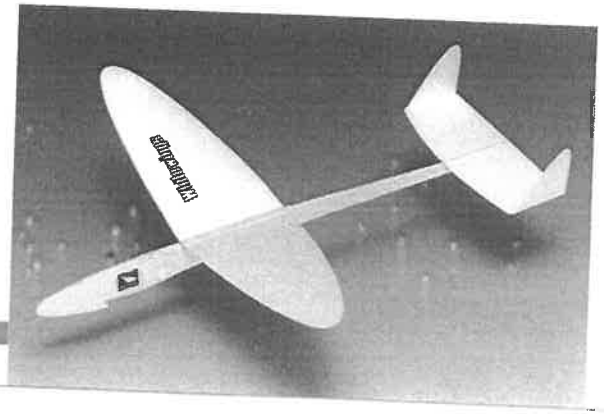
------ Fold with dashed line inside.

↑ Arrows point forward.

Bend-resistant direction

Whitewings®

Racer 547 Skylark



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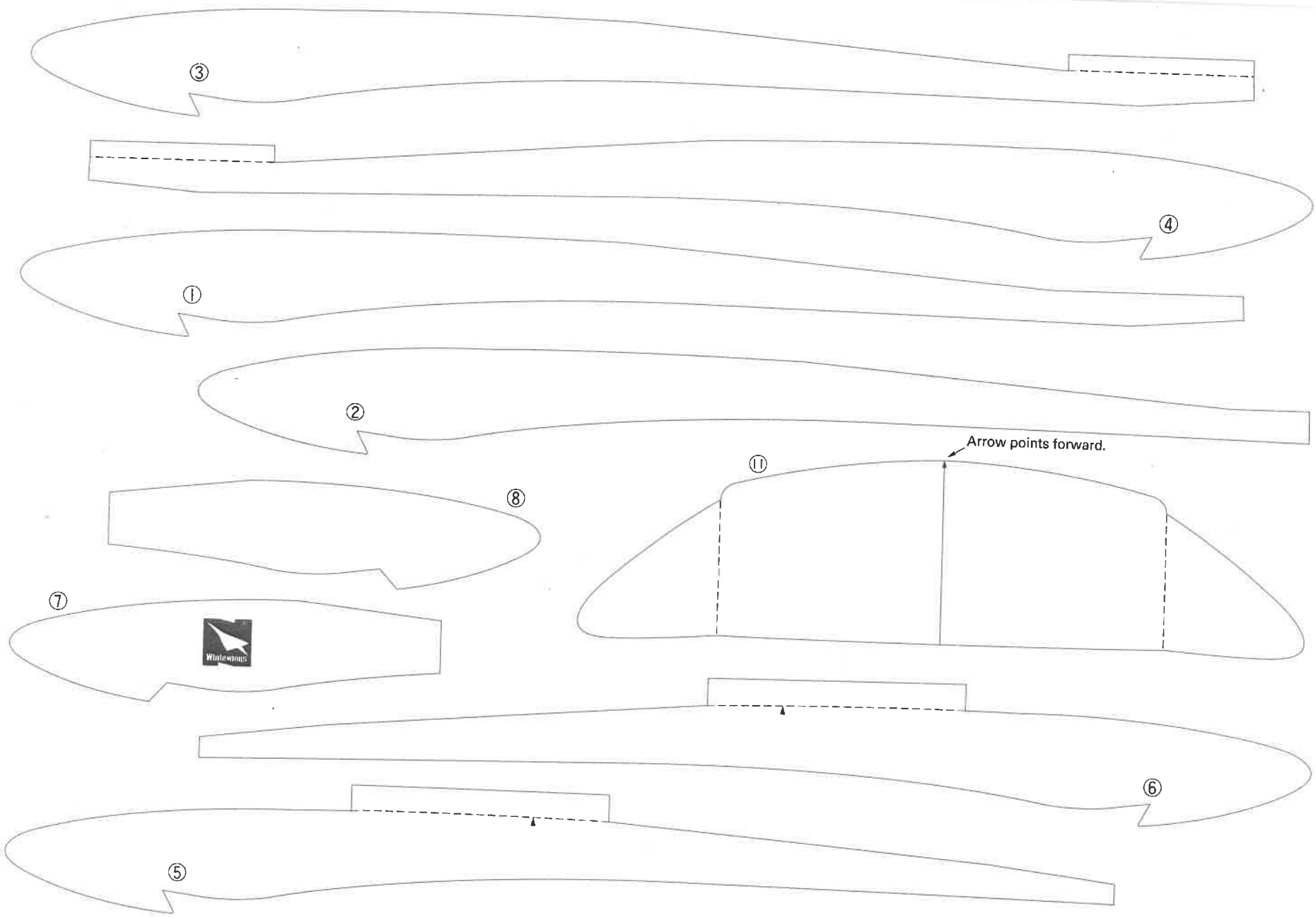

③
④
①
②
⑧
⑪
Arrow points forward.
⑦
Whitewings
⑥
⑤

⑪ Dot towards the front.

⑨ Arrow points forward.

Dot towards the front. ⑫

Whitewings

Cut along the solid lines up to the deshed line.

Cut along the solid lines up to the deshed line.

Arrow points forward.

⑩

Arrow points forward.

⑬

35°

Dihedral angle gauge

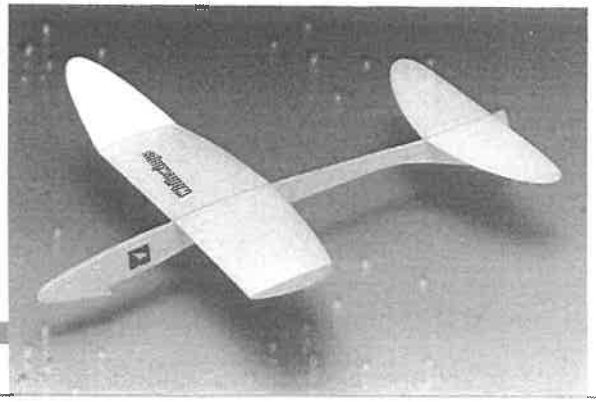
Bend-resistant direction

------ Fold with dashed line inside.

↑ Arrows point forward.

Whitewings®

Racer 548 Sunbird



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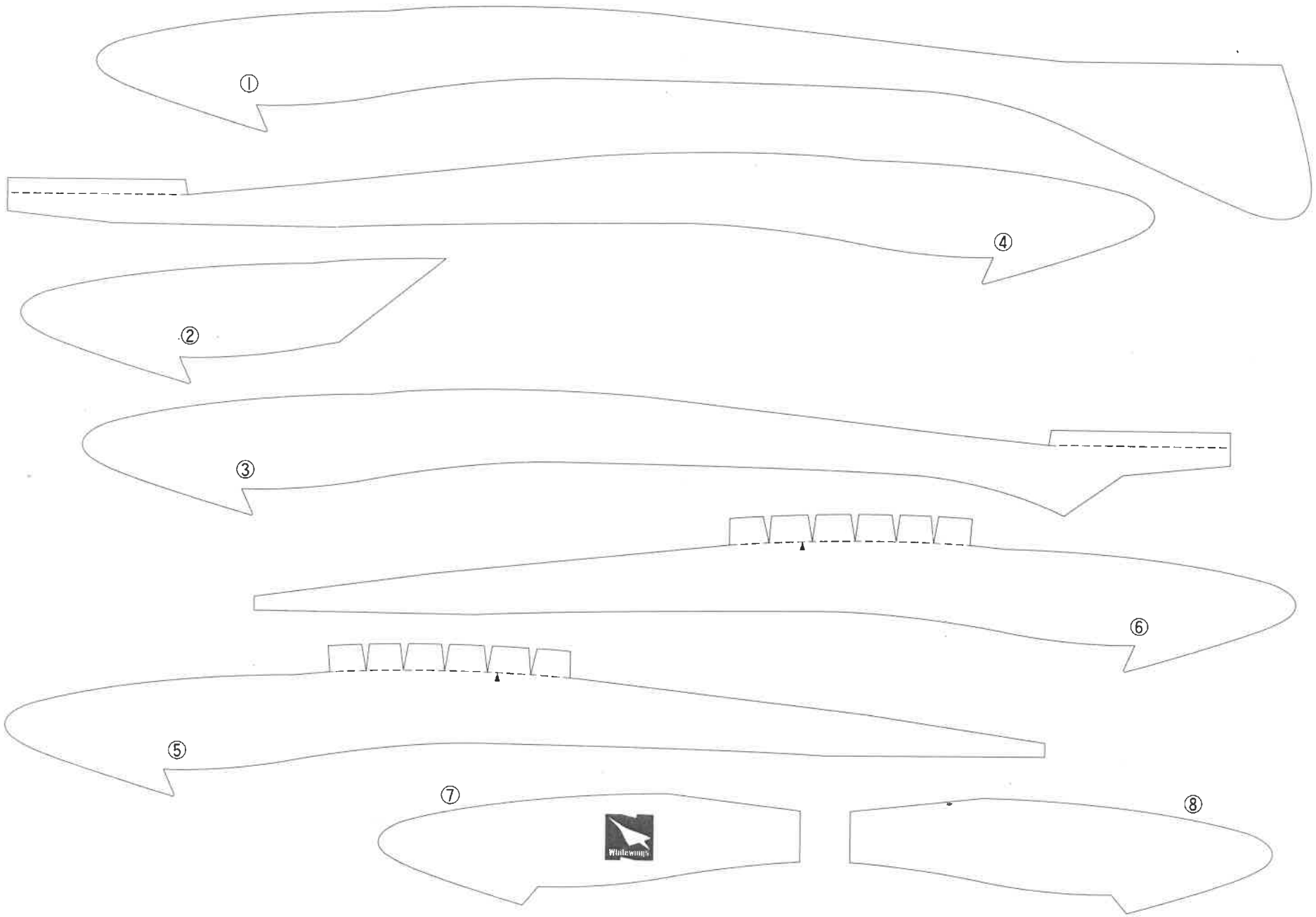

①
④
②
③
⑥
⑤
⑦
⑧

Arrow points forward.

⑧

Whitewings

5°

5°

Dihedral angle gauge

7°

7°

Arrow points forward.

⑨

⑩

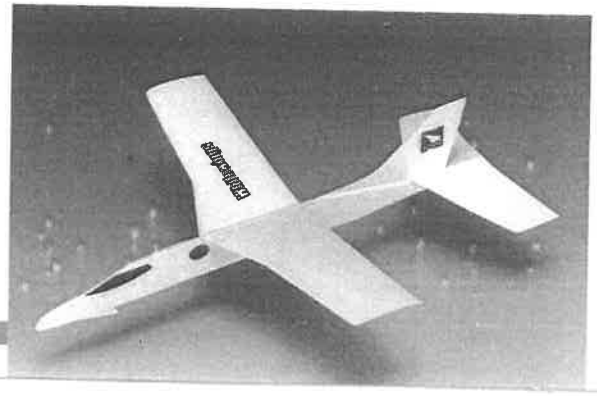
Bend-resistant direction

Fold with dashed line inside.

Arrows point forward.

Whitewings®

Light Plane 318 Business Jet



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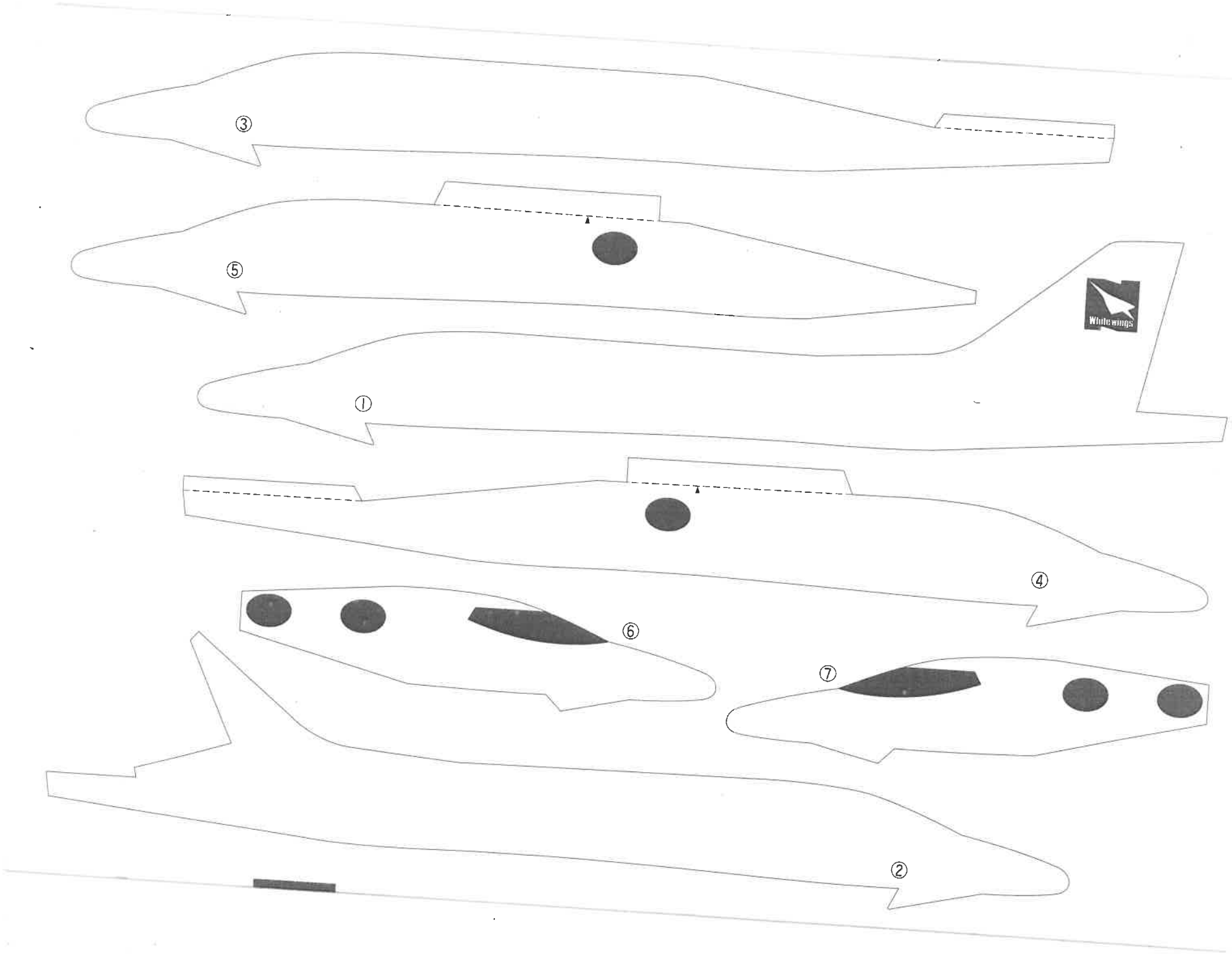

③
⑤
①
Whitewings
④
⑥
⑦
②

⑨

Arrow points forward.

Whitewings

⑭ Arrow points forward.

Arrow points forward.

⑩

⑪

⑬

⑫

Arrow points forward.

Arrow points forward.

Cut along the solid lines up to the deshed line.

Bend-resistant direction

Dihedral angle gauge

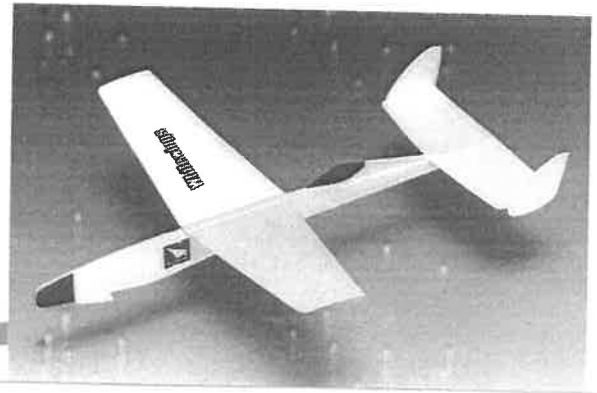
12° 12°

----- Fold with dashed line inside.

↑ Arrows point forward.

Whitewings®

Light Plane 314 Speed- Racer-Shape



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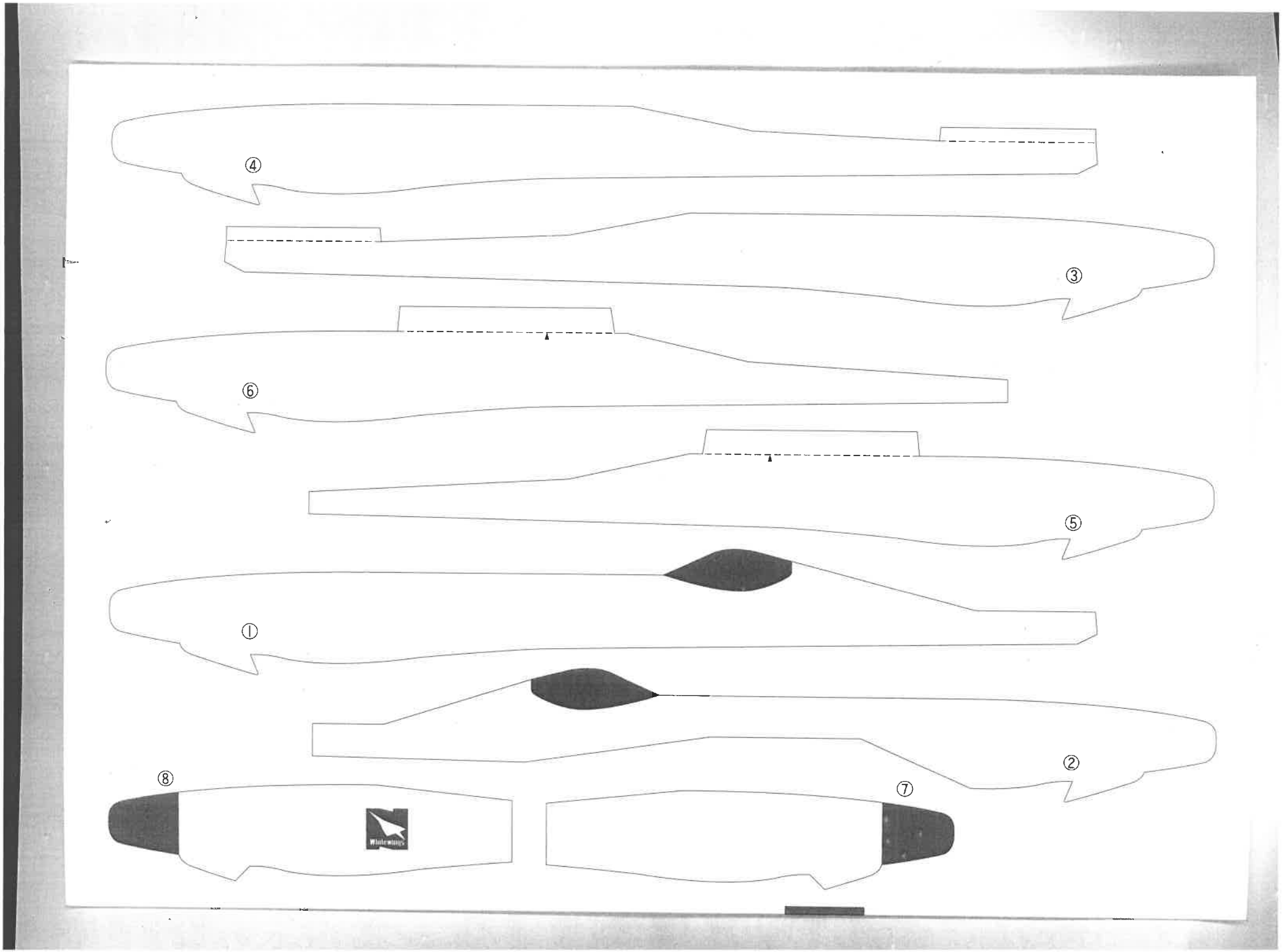
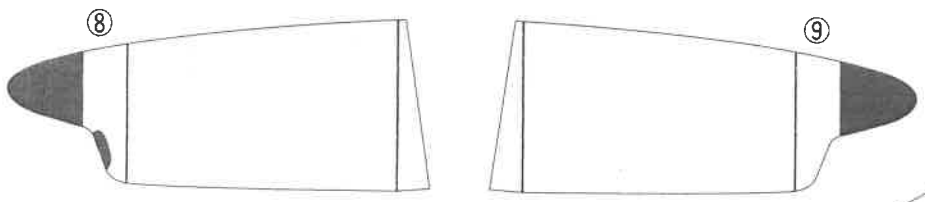
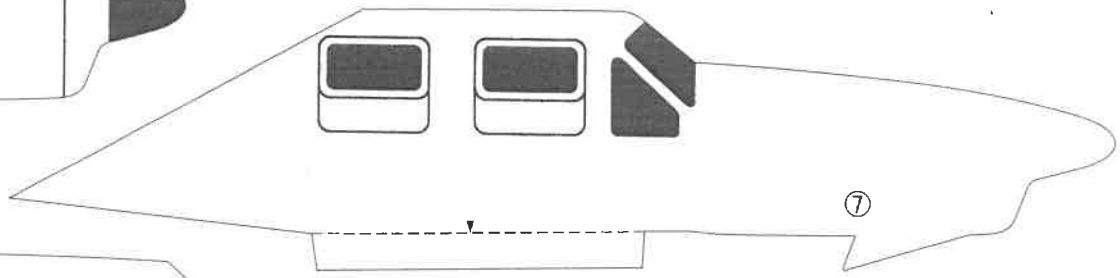
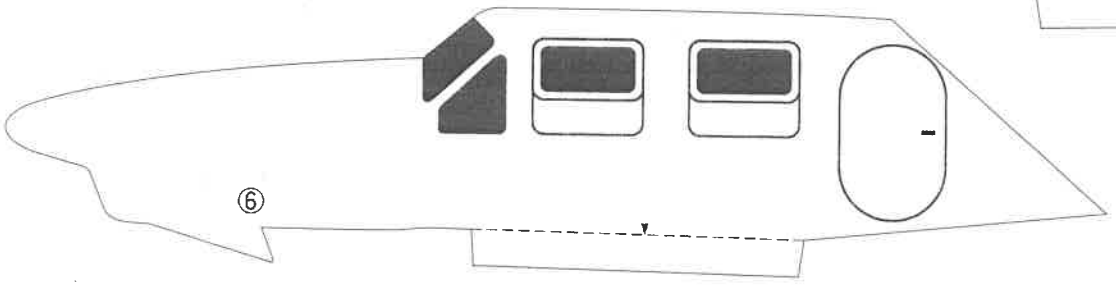
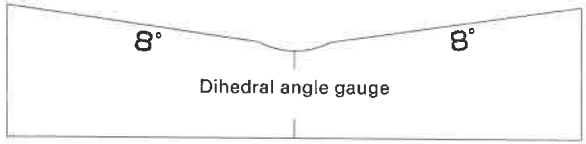
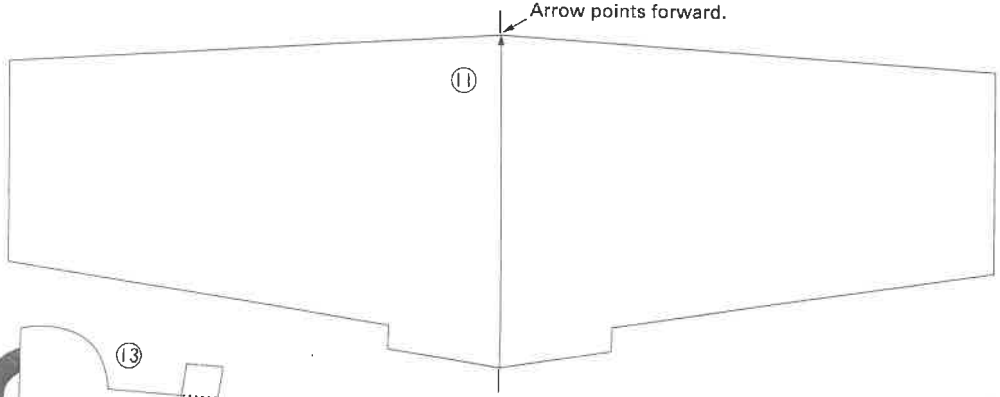

④
③
⑥
⑤
①
②
⑧
⑦

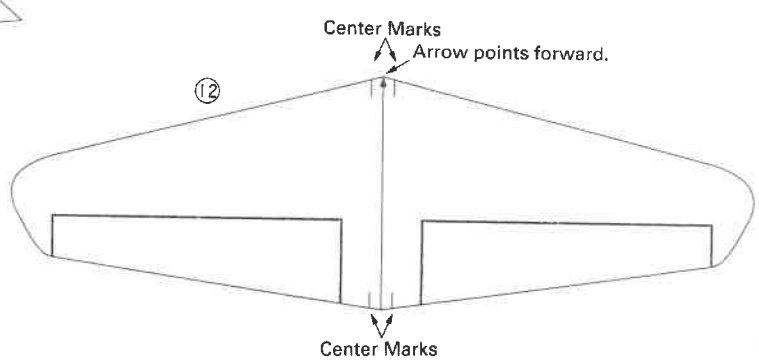


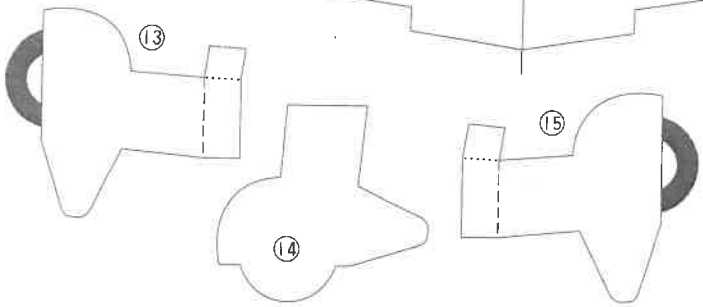






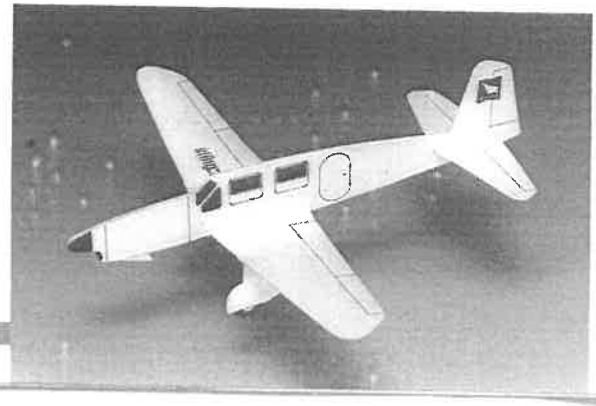






Bend-resistant direction

Fold with dashed line inside.
Arrows point forward.



Whitewings®

Caudron C630 "SIMOUN"

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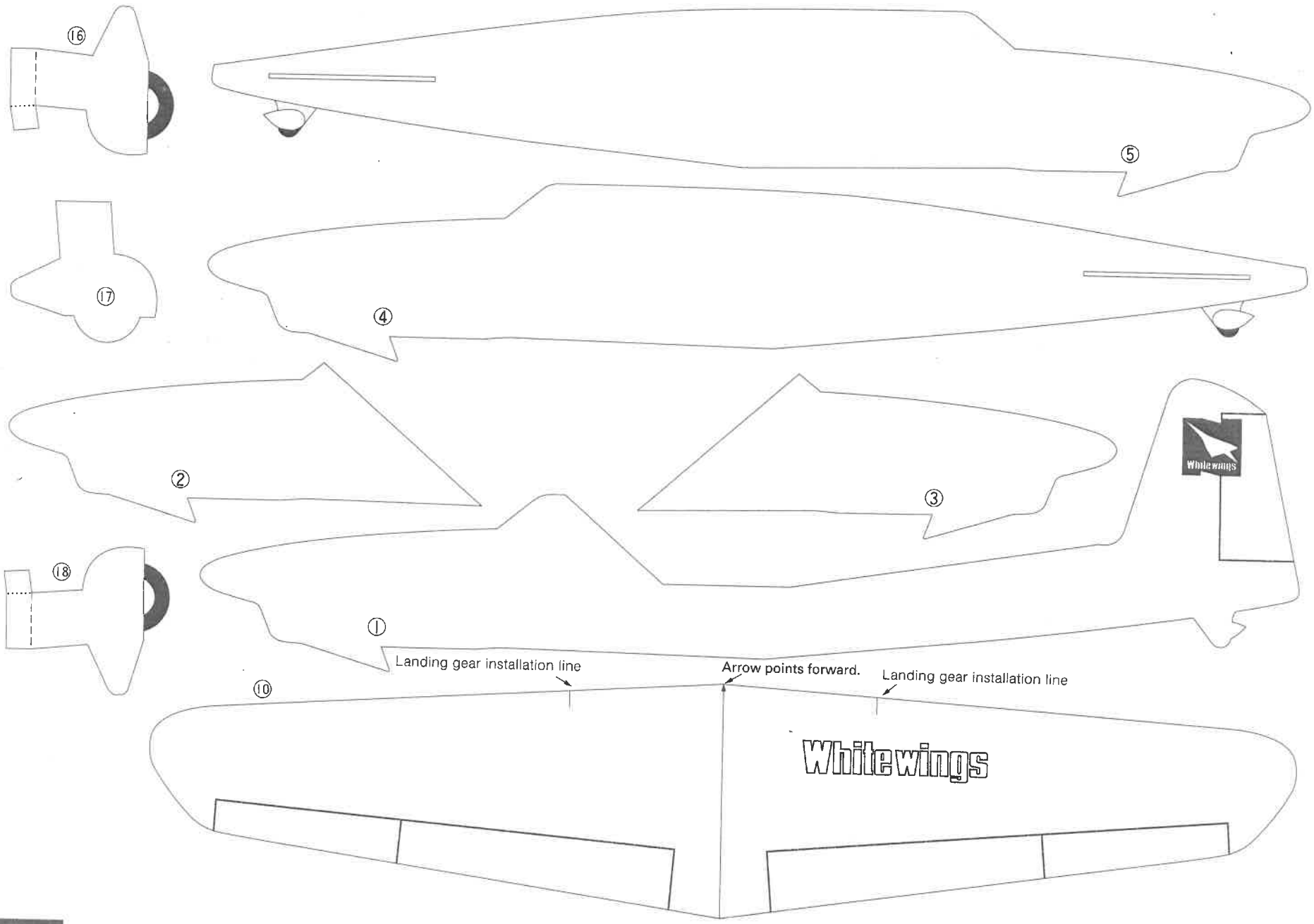
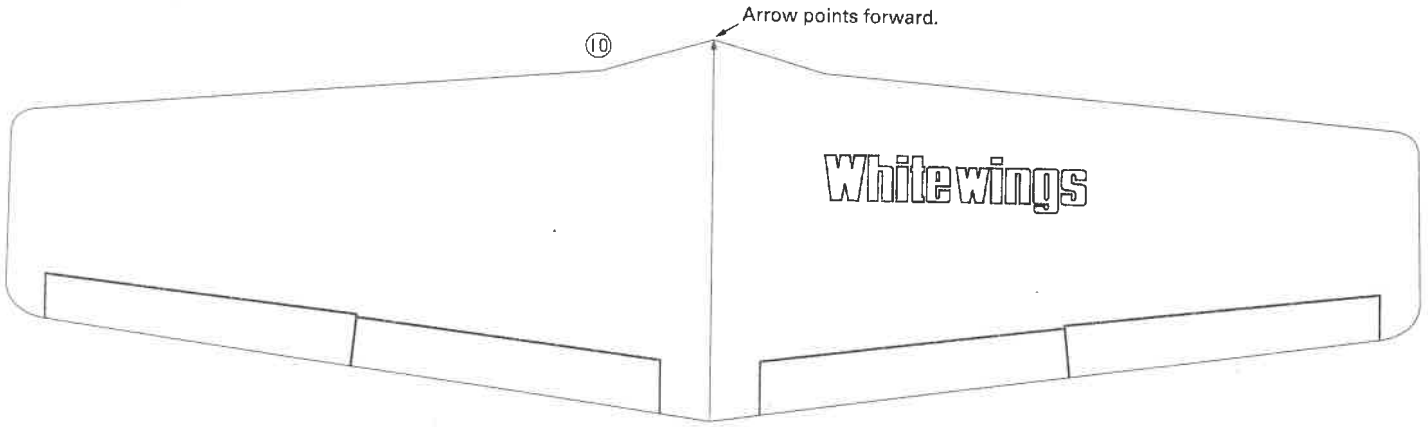
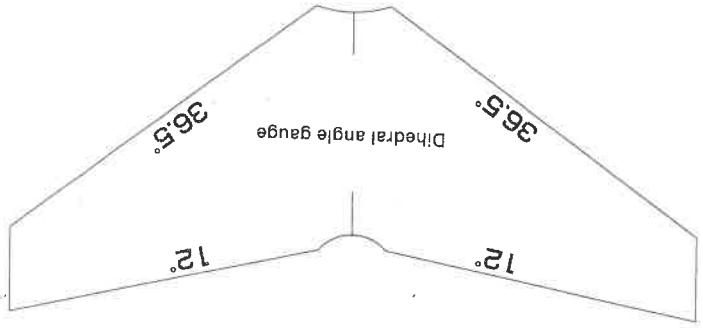
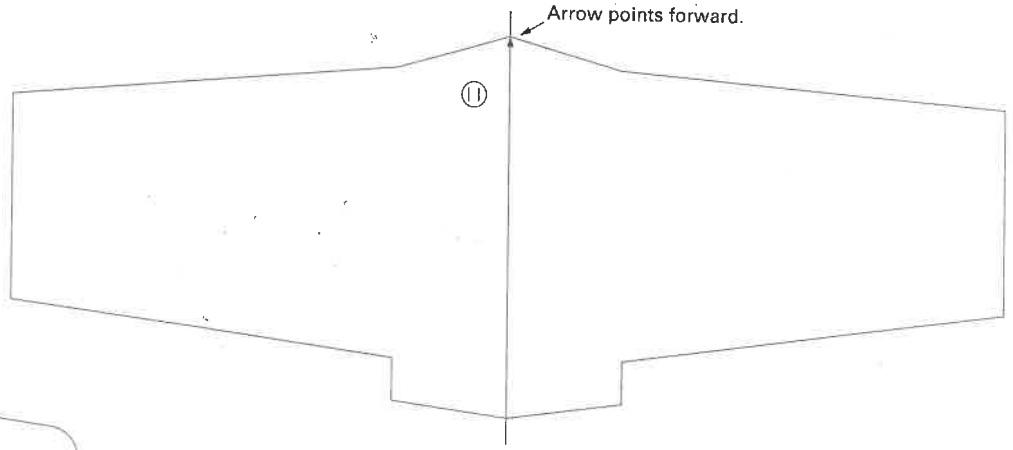
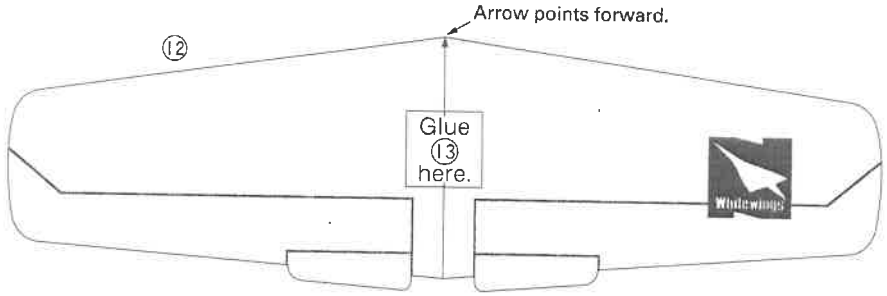
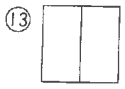

⑯
⑤
⑰
④
②
③
⑱
①
⑩
Landing gear installation line
Arrow points forward.
Landing gear installation line
Whitewings











Fold with dashed line inside.
Arrows point forward.

Bend-resistant direction

Whitewings®

Beechcraft V35 "BONANZA"

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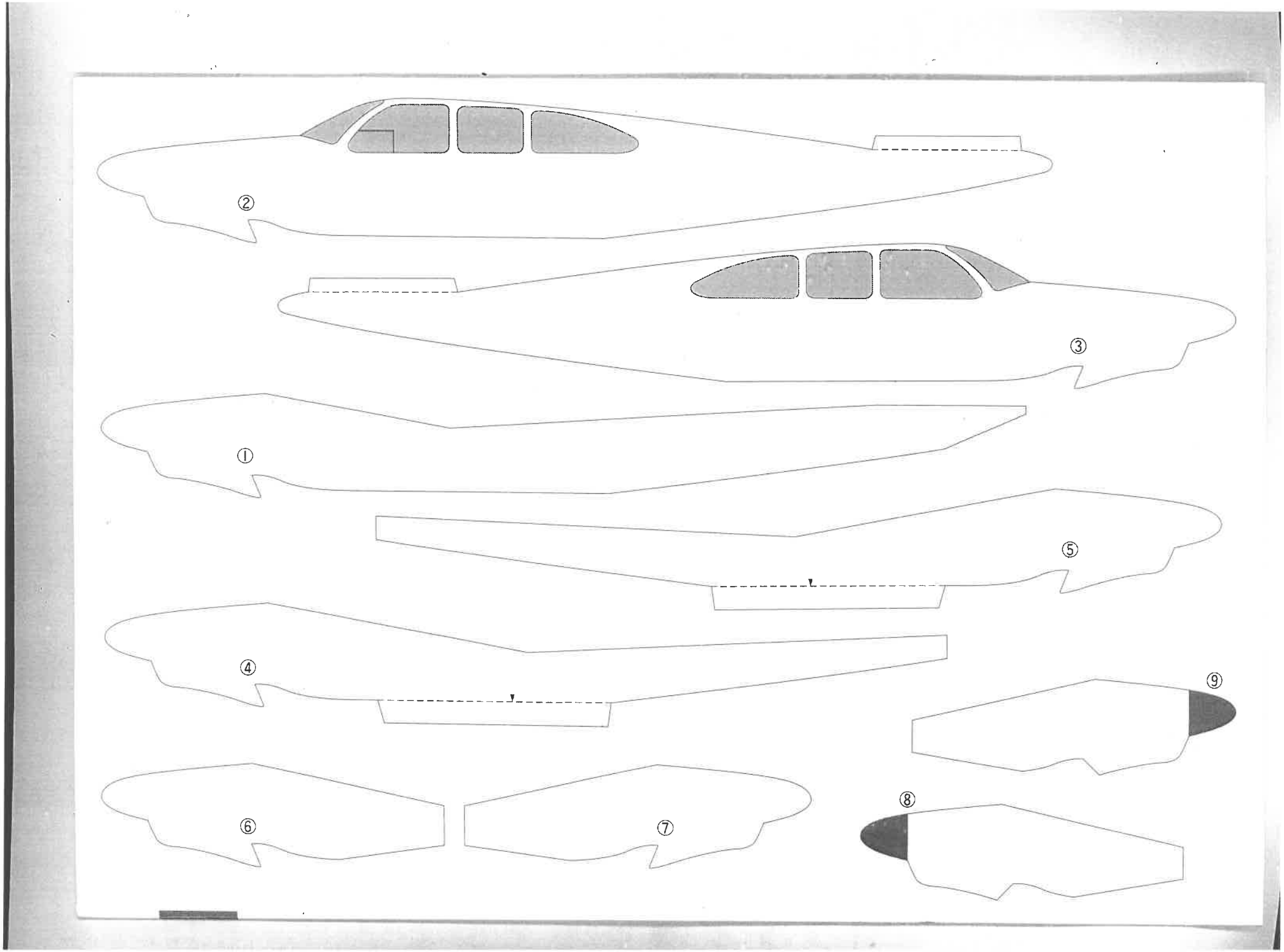
②
③
①
⑤
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⑧